

RD-A175 042

EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES OF  
AIR FORCE LOGISTICS (U) AIR FORCE INST OF TECH  
WRIGHT-PATTERSON AFB OH SCHOOL OF SYST. T L PETERSON

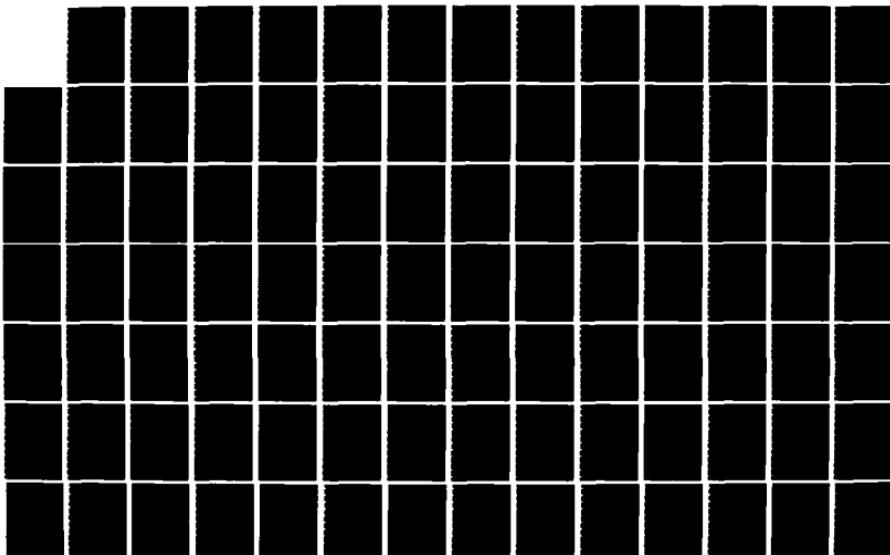
1/2

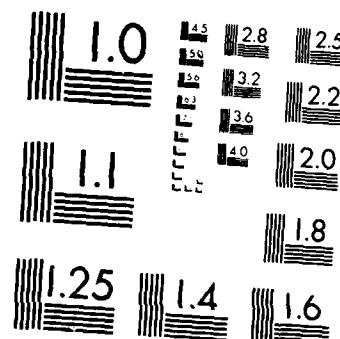
UNCLASSIFIED

SEP 86 AFIT/GLM/LSQ/865-58

F/G 5/1

NL





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963 A

AD-A 175 042



(2)

(2)

EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES  
OF AIR FORCE LOGISTICS COMMAND  
CONTRACT NEGOTIATORS

THESIS

Terry L. Peterson, B.B.A.  
Captain, USAF

AFIT/GLM/LSQ/86S-58

DISTRIBUTION STATEMENT A

Approved for public release;  
Distribution Unlimited

DEPARTMENT OF THE AIR FORCE  
AIR UNIVERSITY

**AIR FORCE INSTITUTE OF TECHNOLOGY**

JRC FILE COPY  
JRC

Wright-Patterson Air Force Base, Ohio

DTIC  
ELECTED  
DEC 15 1986

B

86 12 15 025

AFIT/GLM/LSQ/86 S-58

EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES  
OF AIR FORCE LOGISTICS COMMAND  
CONTRACT NEGOTIATORS

THESIS

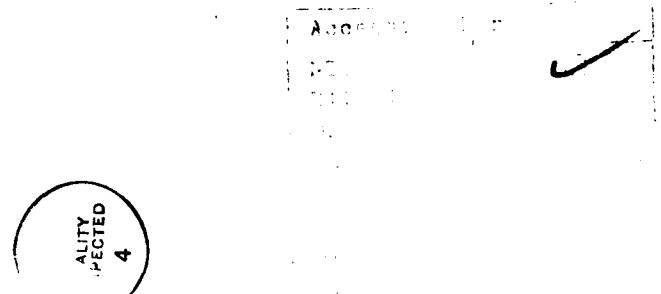
Terry L. Peterson, B.B.A.  
Captain, USAF

AFIT/GLM/LSQ/86S-58

DTIC  
SELECTED  
DEC 15 1986  
S B

Approved for Public Release; distribution unlimited

The contents of the document are technically accurate, and no sensitive items, detrimental ideas, or deleterious information are contained therein. Furthermore, the views expressed in the document are those of the author(s) and do not necessarily reflect the views of the School of Systems and Logistics, the Air University, the United States Air Force, or the Department of Defense.



AFIT/GLM/LSQ/86S-58

EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES  
OF AIR FORCE LOGISTICS COMMAND  
CONTRACT NEGOTIATORS

THESIS

Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology  
Air University  
In Partial Fulfillment of the  
Requirements for Degree of  
Master of Science in Logistics Management

Terry L. Peterson, B.B.A.  
Captain, USAF

September 1986

Approved for Public Release; distribution unlimited

### Acknowledgements

The author would like to thank the following people for their assistance in the research and writing of this thesis: my academic advisor, Lt Col Gary L. Delaney, for steering me toward this topic area, Dr. Charles R. Fenno for his advice and morale-building pep talks, Dr. Robert B. Weaver for his assistance with the survey approval extension, fellow student Capt Marc M. Sager for his computer expertise, and Maj H. Richard Finch of HQ AFLC/PM and Mr. Carroll Morris of the Wright-Patterson Contracting Center for their support as points-of-contact for survey questionnaire distribution.

Special thanks are given to Capt Bernard J. Faenza, for being a most knowledgeable and understanding thesis advisor, and especially to Kathryn for her support and encouragement on the home front.

Terry L. Peterson

## Table of Contents

	Page
<b>Acknowledgements</b> . . . . .	ii
<b>List of Tables</b> . . . . .	v
<b>Abstract</b> . . . . .	vii
<b>I. Introduction</b> . . . . .	1
General Issue . . . . .	1
Specific Problem . . . . .	2
Background . . . . .	3
Objective . . . . .	4
Research Questions . . . . .	4
Investigative Questions or Tasks . . . . .	5
Principal Terms and Definitions . . . . .	6
<b>II. Literature Review</b> . . . . .	8
Overview . . . . .	8
Literature Categories . . . . .	9
Summary . . . . .	16
<b>III. Research Method</b> . . . . .	18
Population . . . . .	18
Data Collection Plan . . . . .	18
Survey Instrument . . . . .	19
Statistics . . . . .	21
<b>IV. Findings and Analysis</b> . . . . .	25
Demographic Analysis . . . . .	25
Ranking of Tactics . . . . .	33
Frequency and Preference of Strategy Use . . . . .	37
Preferred Strategies in Various Contract Situations . . . . .	43
Strategy Ranking by Demographic Differences . . . . .	57

	Page
<b>V. Summary, Conclusions and Recommendations . . . . .</b>	<b>66</b>
<b>Research Question One. . . . .</b>	<b>66</b>
<b>Research Question Two and Three. . . . .</b>	<b>67</b>
<b>Research Question Four . . . . .</b>	<b>69</b>
<b>Research Question Five . . . . .</b>	<b>70</b>
<b>Research Question Six . . . . .</b>	<b>72</b>
<b>Research Recommendations . . . . .</b>	<b>73</b>
<b>Appendix A: Survey Questionnaire . . . . .</b>	<b>75</b>
<b>Appendix B: Recommended Reading List . . . . .</b>	<b>85</b>
<b>Bibliography. . . . .</b>	<b>37</b>
<b>Vita . . . . .</b>	<b>39</b>

List of Tables

<b>Table</b>		<b>Page</b>
I.	<b>Age Frequency Distribution</b>	27
II.	<b>Military Rank and Civilian Grade Frequency Distribution</b>	28
III.	<b>Years of Federal Service</b>	29
IV.	<b>Years in Contracting</b>	29
V.	<b>Education Level</b>	30
VI.	<b>Negotiation Training Course Attendance</b>	31
VII.	<b>Proportion of Male and Female Respondents</b>	31
VIII.	<b>Frequency and Ranking of Tactics</b>	34
IX.	<b>Average Rank Scores and ARS Ranking of Strategy Frequency</b>	39
X.	<b>Average Rank Scores and ARS Ranking of Strategy Preference</b>	41
XI.	<b>Ranking of Strategies Used to Strategies Preferred</b>	43
XII.	<b>Frequencies of Strategies Under Different Contract Types</b>	47
XIII.	<b>Strategy Frequencies Based on Dollar Value</b>	50
XIV.	<b>Strategy Rankings Based on Contractual Action</b>	53
XV.	<b>Strategy Rankings Based on Type of Acquisition or Program</b>	54

Table	Page
XVI. Strategy Rankings Based on Degree of Competition . . . . .	56
XVII. Strategy Rankings Based on Education . . . . .	59
XVIII. Strategy Rankings Based on Military and Civilian Status. . . . .	61
XIX. Strategy Rankings Based on Contracting Experience . . . . .	62
XX. Strategy Rankings Based on Sex . . . . .	63
XXI. Strategy Rankings Based on Negotiating Training . . . . .	65
XXII. Most Frequently Used Tactics . . . . .	68

### Abstract

This research examined the use of negotiation strategies and tactics by ninety-two Air Force Logistics Command contract negotiators. Ten strategies and thirty-three tactics were ranked by the negotiators according to preference and frequency of use. The negotiators also indicated strategies preferred under five situational contract variables: contract type, dollar amount, type of action, type of program, and degree of competition.

The survey questionnaire method was used to gather data from Air Force Logistics Command contracting organizations at Wright-Patterson AFB OH. The data was analyzed using the Statistical Package for the Social Sciences (SPSS). Frequency distributions were analyzed by use of two non-parametric statistical tests: the Kendall-W Coefficient of Concordance and the Kendall-Tau Rank Correlation Coefficient. The Kendall-W tested for overall group consensus on tactic and strategy rankings. The Kendall-Tau tested agreement between paired ranking sets of tactics and strategies.

The rankings of tactics and strategies by the AFLC contract negotiators were compared with the rankings by Air Force Systems Command negotiators from a previous study. Substantial similarities were found in these areas: the ranking of tactic use by Air Force and contractor negotiators; the overall strategy use and preference rankings; the strategies preferred under various contract situations. Differences between the two commands were found in the comparison of strategy rankings by groups within demographic categories. This AFLC study noted disagreement on strategy rankings in the categories of education level, negotiation strategy, and contracting experience, but the AFSC study showed agreement between these groups.

EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES  
OF AIR FORCE LOGISTICS COMMAND  
CONTRACT NEGOTIATORS

I. Introduction

General Issue

The purpose of the Competition in Contracting Act (CICA) of 1984 is to increase the use of competition in Government contracting. In achieving this purpose it has revised and redefined Government procurement methods. The law makes "full and open" competition the standard for award of federal contracts. The "full and open" competition standard is met by either the sealed bid or competitive proposal procedures. "Competition under limited conditions" involves award of contracts in seven specific categories, including small business set asides, small purchases (up to \$25,000), and architecture and engineering contracts. The third and final procurement category under CICA is noncompetitive-sole source. Permission for sole source contracting is given through approval of a Justification and Approval statement under one of seven strictly defined exceptions. The sealed bid procedure is the only procurement method which does not require discussions with the contractor, negotiation, as part of the process. Negotiation, whether competitive or noncompetitive, involves "bargaining between buyer and seller with the objective of reaching an agreement on the price, terms and conditions of the transaction." (14:5-15) When negotiation takes place for award of a federal

contract, the full responsibility of ensuring advantageous price, terms and conditions rests on the expertise of the government negotiator. Billions of dollars each year are committed through negotiation activity for the purchase of military weapons and supplies for the DOD.

### Specific Problem

Air Force contract negotiators generally receive limited exposure to formal training in negotiation, and no course explores the use of tactics and strategies. A two-day negotiation workshop developed by the Navy is the only specialized training available to Air Force personnel. The inexperienced negotiator may observe another negotiator and ask for advice, but learns primarily from trial-and-error experience. Often there is no recognition of standard tactics used by the opponent negotiator or conscious preparation of a negotiation strategy. The government negotiator simply reacts to the planned strategic and tactical actions of the defense contractor's negotiator. Government negotiator knowledge of strategies and tactics would at a minimum allow recognition of, and counter moves to neutralize, an opponent's maneuvers. In the most positive case, Government negotiator mastery of strategies and tactics might allow actual control of the flow of negotiations in certain situations.

Making government contract negotiators aware of general strategies and tactics is the initial task. The literature search found a large number of popular-style books which would serve as an adequate introduction. However, there were very few books which addressed the specialized area of government negotiations. The negotiator would have to adapt sales oriented tactics, for example, to the government situation. There was almost no

research available addressing tactics or strategies used by government negotiators, and no research on their effectiveness in government negotiations.

### Background

This research is a follow-on project to a 1985 thesis entitled Identification of Negotiation Tactics and Strategies of Air Force Contract Negotiators, by Captain Robert M. Catlin and Captain Bernard J. Faenza (3). Their thesis surveyed Air Force Systems Command (AFSC) contract negotiators, then ranked the use and preference of ten negotiation strategies and measured the frequency of use for thirty-three negotiation tactics. This research uses the same survey and replicates their statistical analysis, but uses a sample of Air Force Logistics Command (AFLC) contract negotiators. Comparisons of methods and results will be presented where appropriate to show continuity and to allow for the full understanding of this research.

A literature search was conducted which expanded on the research done by Catlin and Faenza. The Air Force Institute of Technology (AFIT) library facilities, the Defense Technical Information Center (DTIC), and the Defense Logistics Studies Information Exchange (DLSIE) were used to determine if additional material had been published since the previous study. The Dayton Public Library system, and the University of Dayton, Wright State University, and Ohio State University libraries were also used in an effort to locate available information. The three categories of negotiation literature assigned by Catlin and Faenza were used in this research for continuity and the definitions are reproduced here:

Category I: General Negotiations. These publications, consisting of

books, journal articles, and research papers, deal with negotiations from a broad viewpoint and cover many aspects of negotiations, but do not concentrate on any specific facet of negotiations.

Category II: Qualifications of Negotiators. Writings in this category deal specifically with the personal characteristics, education, and experience level of contract negotiators.

Category III: Negotiation Strategies. This third category deals with the topic of strategies used in negotiations.

An analysis of the literature found some useful information on negotiation strategies and tactics in a wide array of anecdotal "how to negotiate" books which are easily accessible to the government negotiator. However, there were few formal research writings available with documented findings in the area of negotiation strategies and tactics. Further research on the activity and experience of active contract negotiators will therefore be beneficial.

### Objective

The objective of the original research was to identify and assess the tactics and strategies used by Air Force contracting personnel in negotiations with defense contractors. The objective of this follow-on research is to expand the sample database used for the initial study's research to allow a broader statement about the application of the findings.

### Research Questions

This research expands the exploratory work done by Catlin and Faenza in the original study. This research is also classified as exploratory, but will

test hypotheses about comparisons to the original work. The first two research questions were used in the original study and are still applicable in this expansion. The third research question addresses the comparison of results from the two studies.

1. What does current literature and theory say about negotiating tactics and strategies?
2. What negotiation strategies do Air Force negotiators use and how do these tactics and strategies compare with current literature?
3. How do the results from the original study's AFSC sample compare with those from the AFLC sample?

#### Investigative Questions and Tasks

The following questions and tasks refer to the research questions listed above and are derived from the investigative questions in the Catlin and Faenza research.

##### Current Literature.

1. Search for and review literature added to the sources used in the initial study.
2. Assess the type and source of literature examined in the original study.
3. Expand the analysis by concentrating on a review of literature types and sources not thoroughly covered in the previous work.
4. Describe any differences or trends in the literature concerning the concept of negotiation and use of strategies and tactics.
5. Compare the findings of this literature review with those from the original study.

### Negotiation Strategies.

1. What proportion of Air Force Logistics Command negotiators indicate they have attended a negotiation workshop or some other formal negotiation training?
2. What tactics do Air Force Logistics Command negotiators use most frequently?
3. Which tactics do Air Force Logistics Command negotiators indicate as most often used by DOD contractors?
4. What strategies do Air Force Systems Command contract negotiators use most often?
5. What are the strategies used under specific contract situations?
6. What differences in the ranking of strategies exist among Air Force Logistics Command contract negotiators based on education level, military or civilian status, years of contracting experience, sex, and whether or not they have received formal negotiation training?
7. How do the results of these questions for Air Force Logistics Command compare with the original study's results for Air Force Systems Command?

### Principal Terms and Definitions

This section is repeated from the original study to ensure the same meaning is ascribed to the terms used. The concept of negotiation, while commonly thought of as a process or event, is represented in the literature in many contexts and perceptions. The following terms are defined explicitly for the purpose of ensuring that this research focuses on the specific problem previously described.

Negotiations, Negotiating, Negotiate: For this research these terms describe the discussions or bargaining between Air Force and industry representatives in order to reach agreement on type, number, and price of military items, and the terms and conditions of the contract, including those relating to legal rights and obligations, delivery, payment, disputes, remedies, and others prescribed by law and/or specifically consented to by both parties.

Military Items: For this research a military item is any product or service, whether or not specifically designed for military purposes, which is included under the agreement reached between the Government and the contractor.

Strategy: This term means a specific plan designed to achieve some overall objective. Strategic planning involves determining one's overall objective(s) before the detailed methods to be employed (tactics) are selected. A strategy may be an individual tactic or an accumulation of tactics employed in negotiations.

Tactic (Technique): For this research a tactic is a particular act or deliberate omission employed to support a predetermined strategy. For example, conceding on minor issues is a tactic generally used to stimulate concessions from the other negotiator, while deliberately avoiding answering a question may be designed to stall the negotiations or test the patience of the other side.

Procurement, Contracting: For this research, these terms are used interchangeably because the DOD substitution of "contracting" for "procurement" in the late 1970's was a policy change in terminology and not definition.

## II. Literature Review

### Overview

This literature review extends and updates the literature review conducted for the Catlin/Faenza study. The review is extended by searching beyond the sources used in the initial study. Additional research was conducted at the University of Dayton, Wright State University, Ohio State University, and the Dayton Public Library. The review is updated by researching the same sources as the initial study to see if any new material has been published between October 1984 and May 1986. The sources used in the initial study were DTIC, DLSIE, and the AFIT library resources.

Computer library catalogue searches were used wherever possible to eliminate the negotiation topics such as such as arms control talks, labor union bargaining, or hostage negotiation which are not relevant to this research. After exclusion of the publications reviewed in the original study, approximately 45 publications were identified as dealing with the general area of contract negotiation. Of these, thirteen publications focused on the specific area of negotiating strategies and tactics and were appropriate for inclusion in this research. For the purpose of continuity, the same publication categories which were defined and used in the previous study's literature review will be addressed here. The thirteen publications were assigned to either Category I (General), Category II (Negotiator Characteristics), or Category III (Negotiating Tactics and Strategies).

## Literature Categories

Category I: General Negotiations. This category consists of publications which address negotiations or negotiating tactics and strategies in a general manner. There are two types of publications within this general category. The first type looks at the underlying psychological theory of human behavior and relates portions of that theoretical body of knowledge to negotiation. The second type is a straightforward "how to do it" presentation of negotiation, covering general theory in an anecdotal format aimed at the popular literature market.

To illustrate the differences, Dr. Chester L. Karrass has divided his book The Negotiating Game, into perfect examples of each type. In the first half of the book, Karrass references psychological experiments in the perception of power, motivational needs, and aspiration levels. Karrass incorporates the psychological theory base he has developed into his own "Satisfaction Model of Negotiation." In the second half, Karrass presents anecdotes and examples in the areas of planning, organization, strategies, and tactics specifically aimed at improving the performance of negotiators (9). The two halves are not related in that the psychological theory and the framework he develops for looking at negotiation are not applied in the practical negotiating performance section. This separation serves to further illustrate the two approaches to examination of negotiation. The theoretical approach seeks to understand negotiation through scientific examination of the underlying psychological needs and motivations of the participants. The practical approach seeks to understand negotiation through the relation of experiences and history (anecdotes) which illustrate examples of successful negotiation activities. This literature review found three books that made an

attempt to synthesize the two approaches to negotiation. Special attention will be given to how the area of strategies and tactics are treated within the general negotiation framework. They are presented below in individual reviews.

**Book Reviews:**

Negotiation, by Roy J. Lewicki and Joseph A. Litterer. Richard D. Irwin, Inc., 1985.

This book is a textbook, with the stated objective of integrating the theoretical work from social psychology, the literature on collective bargaining from the field of labor relations, and the "how to do it" writings of popular works on negotiation, and applying them to managerial negotiation. The authors present strategies and tactics in both a distributive bargaining context and an integrative bargaining context. The theory underlying strategies and tactics in the distributive case relies on estimation of utility cost of delay or termination of negotiations. The theories underlying the integrative case are the "dual concerns model" and aspirational levels. An additional strategy section explores elements of negotiation strategy common to both distributive and integrative bargaining, such as the role of time and the physical environment (10). This book is supplemented by a companion volume of readings, exercises and cases which present a wide variety of negotiation situations-- everything from normal business to a hostage crisis. The readings represent the historical and anecdotal approach to the various aspects of negotiation (11).

Negotiation Behavior, by Dean G. Pruitt. Academic Press, Inc., 1981.

Pruitt is a social psychologist who focuses here on the motives and perceptions underlying the behavior of negotiators, as determined in laboratory experiments on negotiation. He examines "where bargainers place their demands" through both a quantitative approach, by developing a model of demand level and concession rate, and a qualitative approach, by looking at what makes one alternative preferable to another. Pruitt also presents an analysis of strategies used by negotiators to "foster their interests while moving toward agreement." This section includes competitive tactics aimed at eliciting concessions, and coordinative tactics, aimed at collaboration for a mutually acceptable agreement. One example of Pruitt's findings is that competitive tactics are most effective when the negotiator's commitments are seen as credible, based on status and past performance (17).

Bargaining, by Samuel B. Bacharach and Edward J. Lawler. Jossey-Bass Publishers, 1981.

In this book the authors present and explore a theory of bargaining power, or dependence, as the "backbone of bargaining relationships." They consider bargaining power perception, use, and manipulation as the basis for strategy and tactic selection in negotiation. The authors explore the use of the bargaining power framework in the planning of size and timing of tactical concessions and in considering use of "argumentation" tactics, which are a defined set of argument types. They then compare the use of punitive tactic capabilities in "deterrence" and "conflict spiral" theories. Deterrence involves the building up of punitive capability to reduce the use of punitive

tactics and facilitate concession making. The conflict spiral theory suggests that the building up of punitive capabilities increases the use of punitive tactics and inhibits serious bargaining. The bargaining power framework is flexible and subjective, recognizing that the image and perception of power by negotiation participants are what influence the selection of strategies and tactics (1).

This literature review found over 30 books which looked at negotiation from the practical approach, the "how to do it" negotiation book. These books do not focus on strategies or tactics strictly in a contract negotiating situation, but usually examine a wide variety of negotiation situations, including home and everyday life. This type of book may help an individual become a better government negotiator through exposure to a variety of negotiation situations. For example, an individual who learns how to plan for negotiation of a new car purchase by setting limits, defining option ranges, and planning tactics could gain skills useful in planning a government contracting purchase. Several books of this genre may be of value to the government negotiator. For instance, Getting to Yes, by Roger Fisher and William Ury, presents a variation on the win-win approach to negotiation called "principled negotiation" or "negotiation on merits." This method, developed by the Harvard Negotiation Project as an alternative to positional bargaining, focuses on mutual gains for both parties through decision of issues on their merits. This mutual benefit approach might be useful to the government negotiator in fostering a cooperative relationship with a long term contractor (6). In The Prenegotiation Planning Book, William F. Morrison offers practical negotiation planning aids to assist the negotiator

such as a 25 item checklist and a negotiation planning form. He also presents a section listing over 250 buyer-seller issues, including many applicable to government contracting, such as contract types, warranties, and learning curves (16). Negotiations, by Neal W. Beckman, includes an in-depth look at cost ranges and cost data use in negotiation. An Air Force pricing case is examined to illustrate how differing assumptions can affect a cost position. Reference is also made to fixed-price and cost-plus contracts, making this section especially useful to government negotiators. Additional "how to do it" negotiating books are listed in Appendix E, grouped according to the negotiator experience level for which they are appropriate.

Category II: Negotiator Characteristics. This category is defined as containing writings on the qualifications and personality characteristics found or desired in contract negotiators. Catlin and Faenza summarized several research reports dealing directly with negotiator characteristics. It is noted that the three reports reviewed were all of military origin, each being a thesis for either AFIT or the Naval Postgraduate School. No new reports were found in the DTIC and DLSIE search updates, and no books or journal articles from other sources dealt with this area specifically.

Category III: Negotiating Tactics and Strategies. This category contains those publications which present a broad range of individual tactics and strategies used in commercial or government negotiations. The literature review did not find any research strictly on negotiation strategies and tactics. The publications dealing specifically with this topic area were all of the practical "how to do it" nature. Treatment of strategies and tactics

ranged from simply an alphabetical listing and explanation of over 200 tactics by Karrass in Give and Take (10), to a thorough situational analysis of tactic use by Harris (8). The definitional approach was also used in the Handbook of Managerial Tactics by Buskirk, who divides them into the following categories: politics, time, persuasive, and operating(2). While Buskirk's definitional approach may help negotiators become familiar with a wide variety of tactics, especially for recognition when an opponent is using them, the authors do not explain how to integrate the individual tactics into a coherent strategy. The books reviewed below go beyond definitions to present an integrative examination of strategies and tactics in preparation for the negotiation process.

#### Book Reviews:

Business Negotiating Power, by Charles Edison Harris, Esq. Van Nostrand Reinhold Company, 1983.

Harris starts with a brief review of general negotiation principles, then gets right into application of negotiation tactics. He examines nine tactics with situational variations, then presents thirteen "popular vendor ploys", such as "We can't do it for you because the GSA won't let us." Harris also explores reasons for using eight environmental tactics-- from physical surroundings to "biocycles", fatigue, and travel schedule. He then presents a plan with specific steps to prepare for a negotiation, tying together the strategies and tactics with either a cooperative negotiating philosophy or an adversarial negotiating philosophy. His emphasis is on planning to control the negotiation through the component tactics of the strategy. He also includes supplemental sections on contract administration and compliance and contract law (8).

How To Ask For More And Get It, by Francis Greenburger and Thomas Kiernan. Doubleday & Company Inc., 1978.

In this book the authors use strategies and tactics as the structural basis for their discussion of negotiation. They present and explain five strategies-- "common ground and linkage", "establishing an opening and a downside position", "style and power", "whom to negotiate with", and "where and when"-- through discussion of examples and anecdotes. Negotiating tactics are discussed in two groups, the "conflict avoidance" group, and the adversarial group. Situational examples and anecdotes serve to illustrate both types of tactics (7).

Power Negotiating Tactics and Techniques, by David V. Lewis. Prentice-Hall, Inc., 1981.

Lewis' book focuses primarily on negotiation tactics, presented through explanations, examples, and anecdotes. A situational approach is used for a description of tactics, emphasizing for each tactic which situations are most appropriate. Throughout the book, Lewis advises on the recognition and use of power in negotiating while recommending a win-win approach to negotiation (13).

Negotiation: Theory and Practice, by James A. Wall. Scott, Foresman and Company, 1985.

Wall presents an introduction to the negotiation process through use of historical examples, including a day-by-day description of the negotiations for the U.S.-Iranian hostage release. He examines negotiation maneuvers,

tactics, and strategies. A maneuver is defined as a behavior undertaken to improve one's position for the offense or defense, with the intent to support one's tactics. Tactics are grouped into categories such as coercive, reward, threat and debate tactics. Wall presents aids for tactic selection in the development of a strategy, such as a situational decision-tree diagram and several tables listing situational selection guidelines. The negotiation situation is also analyzed with checklists provided for factors like the negotiator-opponent relationship and opponent characteristics, goals, and experience. Wall provides a succinct, but sophisticated guide to situational use of negotiation strategies and tactics (19).

### Summary

Based on this literature review, there is a reasonable amount of material available on negotiation tactics and strategies. However, formal research publications are scarce. The bulk of the material is of a "popular nature" and ranges from the listing of negotiation tactics to extensive situational analyses of tactics appropriate for various negotiation strategies. The situational style publications describe how to incorporate strategies and tactics into the negotiation planning process, and are the most sophisticated of the "how to do it" negotiation books. The majority of these are written by "seasoned" negotiators based on their personal experience; they have an instructional format, but are usually not supported by formal research.

The formal research available is primarily in the area of general negotiation. There were very few writings which coordinated development of a negotiation theory with the practical application of that theory for use by negotiator. Lewicki (11) and Pruitt (17) developed theory and related it

to practical components of negotiation, including sections examining the theoretical basis of strategy and tactic selection. Pruitt based his findings on laboratory experiments in negotiation(17:10). The Catlin and Faenza study (3) was the first research on active negotiators' situational use and preference of strategies and tactics.

The literature review from that study found that the topic of negotiating strategies and tactics does not have a significant base of formal writing. This literature search expanded and updated the previous review, and reaches the same conclusion. The Catlin/Faenza research established an information base to relate government contracting personnel use of strategies and tactics to various contracting situations. This research will expand that data base with the objective of allowing broader generalization of the conclusions.

### III. Research Method

#### Population

The population of interest for this study are the approximately 300 military and 3800 civilian contract negotiators in Air Force Logistics Command (AFLC) (18). AFLC contracting organizations included in this population are the staff group at HQ AFLC/PM, the Wright-Patterson Contracting Center, both located at WPAFB; and the five Air Logistics Centers (ALC) at Ogden, Utah, Sacramento, California, Oklahoma City, Oklahoma, San Antonio, Texas, and Warner Robins, Georgia. In fiscal year 1985 these organizations completed over 374,000 contractual actions worth \$13.2 billion (18). These contractual actions were in support of the AFLC mission of providing systems, material, and services to support, maintain, and modify the operational weapons systems of the Air Force. Each ALC has designated responsibility for both specific weapon systems, such as the B-52 or F-111, and specific types of components, such as avionics or hydraulics.

#### Data Collection Plan

The census mail survey approach was used in the Catlin/Faenza study to establish an information base on the tactics and strategies used by AFSC contracting personnel. This study seeks to expand that information base by adding negotiators from AFLC. However, the population of AFLC contracting personnel was too large for a census survey approach. A sample of AFLC negotiators was made by selecting three AFLC contracting organizations and conducting a census mail survey of them. These organizations were HQ

AFLC/PM, the Wright-Patterson Contracting Center at WPAFB, and one of the five Air Logistic Centers.

The collection procedure was conducted through points of contact at each organization. The appropriate number of survey packages were sent to the point of contact, who then distributed them to those contracting personnel identified as having negotiation experience. Pre-addressed envelopes were included with each survey questionnaire to facilitate their return.

### Survey Instrument

The questionnaire used for this research was the same one developed by Catlin and Faenza and used in their study of AFSC contract negotiators. The survey questionnaire is included in Appendix A. The survey was refined and validated through testing on AFIT graduate students and faculty members, as well as staff personnel at HQ AFSC/PMP (Contracting Policy). In addition, the survey questionnaire was completed and returned by 278 AFSC negotiators for the original study. The questionnaire was approved for use at the AFSC product divisions by the central Air Force survey approval office, HQ AFMPC/MPCYS, for application to both military and civilian personnel. Approval for use of the survey at selected AFLC organizations in this follow-on project was given by telephone from Mr. Charles H. Hamilton of HQ AFMPC/MPCYS.

The questionnaire is fairly complex, and is divided into two parts. Part I requested contract negotiator demographic information, while Part II requested data on the negotiator's use of tactics and strategies. The questionnaire requires 30-45 minutes for completion.

The demographic data in Part I consisted of age, sex, military rank or civilian grade, years of federal service, years of contracting experience, education level, professional training, negotiation frequency, current position, type of organization assigned to, and estimated number of negotiations conducted or attended. This information was used to determine if strategy use rankings could be differentiated by groups within several demographic categories. The categories selected for analysis were sex, rank or grade, federal service, contracting experience, education level, and negotiation training. This information may serve to highlight perceptual differences on strategy use effectiveness between groups within a demographic category. If any differences are observed, contracting managers might be able to focus appropriate training to encourage use of those strategies preferred by the contracting organization.

Part II consists of three sections on various aspects of negotiation tactics and strategies. The first section listed 33 tactics, compiled by Catlin and Faenza from several sources. Respondents were first asked to list the five they used most often, then to list the five tactics their contractor counterparts used most frequently. Respondents were not limited to the listed tactics, but were encouraged to write in others used or encountered. The second section listed and defined ten negotiation strategies. The contract negotiators were asked to rank the ten strategies by both frequency of use and preference for use. The third section referenced the same ten strategies and requested the negotiators to indicate their most preferred strategy under various contractual situations. Each situation was to be considered the most important factor in the negotiation strategy decision. The situations are contract type, dollar value, type of contractual action, type of acquisition or program, and the degree of competition. The information

from these sections provide a variety of useful information. The tactics section provides a list of the AFLC negotiators' most popular tactics, as well as their perception of defense contractors' most popular tactics. The second section provides an ordinal ranking of negotiation strategy use and preference, and allows comparison of the two rankings to see if AFLC negotiators are able to use those strategies which they prefer. Finally, information from section three indicates the strategies preferred under various contractual situations. The aggregation of this information provides insight into the negotiating activity of AFLC contracting personnel. This insight might allow determination of consistency with organizational negotiation philosophy.

### Statistics

The Statistical Package for Social Sciences (SPSS) was used for analysis of the survey data in the Catlin and Faenza study, and therefore was most appropriate for use in this follow-on project. SPSS is commonly used among the AFIT/LS student and faculty, and is available on the AFIT Harris 800 computer system in Building 641. Use of the same statistical package as the previous study facilitates direct comparison of results and allows for potential combination of data to produce an enhanced information base. In fact, the original programs for the two primary statistical tests were available for use on the new data files. These two programs, the data file, and the data file code key are maintained on the AFIT Harris 800 system in the School of Systems and Logistics.

This research, like the Catlin/Faenza study, analyzes whether the respondents to the survey tend to agree on the negotiation tactics and

strategies they use or prefer to use. This agreement can be examined within groups of individuals by using non-parametric tests. The tests measure for an overall consensus based on averaging the tactic and strategy selection frequencies tabulated from the survey responses. The primary non-parametric statistical tests used for this analysis were the Kendall Coefficient of Concordance  $\omega$ , and the Kendall "Tau" ( $\tau$ ). An extensive explanation of each test is given in the Catlin/Faenza thesis, so they will only be summarized here.

The Kendall Coefficient of Concordance  $\omega$  measures "agreement among several ['m'] . . . sets of rankings of 'n' objects or individuals" (4:326). The Kendall  $\omega$  test was used to determine if there is agreement among the survey respondents' rankings of the ten strategies for frequency of use and preference of use. The assumptions required for the use of the Kendall  $\omega$  are:

- a. The data consist of 'm' complete sets of observations or measurements on 'n' objects or individuals.
- b. The measurement scale is at least ordinal.
- c. The observations as collected or recorded may consist of ranks . . . or be capable of being converted to ranks. [4:327]

56 of the 92 survey respondents completed the strategy section to allow formation of a "56 by 10" matrix for application of this test. The SPSS software program was used to generate the test statistic. For analysis with "m" larger than 15, the "chi square" ( $\chi^2$ ) large sample approximation is used. The  $\chi^2$  is approximated by multiplying the computed Kendall  $\omega$  by [ $m(n-1)$ ], and this calculation is also performed by the SPSS program. The  $\alpha$  significance level for all the statistical tests in this research will be .01. This means that if the null hypothesis is rejected, the probability of randomly observing a value greater than or equal to the test statistic is less than .01.

To reject the null hypothesis, the calculated test statistic must be larger than the critical value from the appropriate table. The critical value for the strategy ranking analyses is the  $X^2$  with 9 degrees of freedom at the .01 significance level, which is 21.666 (15:899).

The generalized null hypothesis ( $H_0$ ) for the Kendall  $\omega$  is that the 'm' sets of rankings are not associated. The generalized alternative hypothesis ( $H_a$ ) is that the 'm' sets of rankings are associated. The rejection of the null hypothesis in this research indicates agreement or consensus among the individual respondents' rankings of tactics or strategies. The relative strength of the association may be inferred by the magnitude of the computed test statistic above the critical value.

The second non-parametric statistical test used was the Kendall "Tau" ( $\tau$ ) which measures agreement among "m by n" sets of rankings where 'n' is equal to 2. The Kendall  $\tau$  test indicates whether there is a direct (positive) or an inverse (negative) association between the two sets of rankings. The test statistic ranges from +1 for a perfect direct relation, to -1 for a perfect inverse relation. For this research the test was used to determine (1) if there is agreement between the two rankings of the ten strategies for frequency of use and preference of use, (2) if there is agreement between the two sets of rankings for various demographic groups, and (3) if there is agreement between the two rankings of tactics used by Air Force negotiators and defense contractor negotiators. The assumptions required for use of the Kendall  $\tau$  are:

- a. The data consist of random sample of 'n' observation pairs of numeric or nonnumeric observations. Each pair of observations represents two measurements taken on the same unit of association.

b. The data are measured on at least an ordinal scale. [4:327]

The tests of rankings of strategies used a "10 by 2" matrix, while a "33 by 2" matrix was used to test the rankings of tactics. The SPSS software program was used to generate the test statistic. The  $\alpha$  significance level for this statistical test is .01. The critical value for the strategy ranking analyses is the  $\tau$  for "n = 10" at the .01 significance level, which is .600. The critical value for the tactic ranking analysis is the  $\tau$  for "n = 33" at the .01 significance level, which is .280. The null hypothesis will be rejected if the computed value of  $\tau$  is either positive and larger than the critical value, or is negative and less than the critical value.

The generalized null hypothesis ( $H_0$ ) for the Kendall  $\tau$  is that the two sets of rankings are not in agreement. The generalized alternative hypothesis ( $H_a$ ) is that the two sets of rankings are in agreement. The rejection of the null hypothesis in this research indicates agreement between the two sets of rankings or strategies. The relative strength of the association may be inferred from the closeness of the computed test statistic to +1, which would indicate a perfectly positive agreement.

The Spearman Rank Correlation Coefficient  $r_s$  also tests for agreement between two sets of rankings, using the squared differences between the pairs of rankings. The test statistic indicates direct and inverse relations in the same manner as the Kendall  $\tau$ . The assumptions, hypotheses, and decision rules are all similar to the Kendall  $\tau$ . The Spearman's  $r_s$  was used to confirm the Kendall  $\tau$  findings, and to compare the rankings of strategies between the AFSC negotiator sample used in the Catlin/Faenza study and the AFLC respondent sample used in this research.

#### IV. Findings and Analysis

The analysis presents first the demographic characteristics of the sample, and then the compiled survey results responding to the investigative questions listed in Chapter I. The areas examined through analysis of the survey results include the tactics most often used by Air Force and contractor negotiators, the strategies used and preferred by the survey respondents, strategies preferred in various contract situations, and strategy use ranking differences attributable to demographic categories.

Investigative Question Number Seven, which calls for a comparison between the Air Force Logistics Command (AFLC) and Air Force Systems Command (AFSC) respondent samples, will be answered through presentation of the corresponding Catlin and Faenza study findings throughout this chapter. The same table formats, titles, and order of presentation are used from the previous study to permit easy cross-reference of the results.

##### Demographic Analysis

The demographic analysis is presented to provide a description of the AFLC sample for this research and allow comparison with the AFLC contract negotiator population demographic characteristics. In addition, a comparison is made with the original study's AFSC sample demographics.

Respondent Population. The research method called for the survey of the AFLC units at Wright-Patterson AFB (WPAFB) and one of the five Air

Logistics Centers (ALC). While HQ AFLC and the Wright-Patterson Contracting Center were very cooperative about permission to survey personnel and assistance with survey distribution, the selected ALC's head of contracting did not give permission to survey his people due to a philosophical difference with the survey content. Unfortunately, time did not permit the solicitation of another ALC for this research. AFLC negotiator population demographic data was provided by HQ AFLC/DPCT from their command-wide personnel management information system.

A Total of 226 surveys were distributed to the contract negotiators in the two organizations at WPAFB. Logistics Command Headquarters returned 24 of 92 surveys, giving a 26.1 percent response rate. The Wright-Patterson Contracting Center returned 68 of 134 surveys, resulting in a 50.7 percent response rate. The overall response rate was 40.7 percent.

Age. Table I, on the following page, shows the frequency distribution of age categories for the respondents. The distribution for the AFLC sample compared well with the AFSC sample, showing significant difference in only one age category, 51 years and older, in which the AFSC sample had 20.7 percent, and the AFLC sample 14.4 percent. The AFLC sample, however, was younger than the AFLC population, with the sample having 59.8 percent 40 years old or younger, and the population having 43.7 percent in this category.

TABLE I  
Age Frequency Distribution

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
Up to 25 years	6	6.5	6.5
26 to 30 years old	16	17.4	23.9
31 to 35 years old	14	15.2	39.1
36 to 40 years old	19	20.7	59.8
41 to 45 years old	7	7.6	67.4
46 to 50 years old	11	12.0	79.3
51 years and older	19	20.7	100.0
<b>Total</b>	<b>56</b>	<b>100.0</b>	

Rank and Grade. Table II shows the frequency distribution of military rank and civilian grade. Note that only 3.3 percent of the AFLC sample respondents were military and 96.7 percent were civilian. The AFLC negotiator population has about 7 percent military. The AFSC sample had 18.8 percent military respondents. The single largest category was civilian grade GS-12, with the AFLC sample having 37 percent, the AFLC population 32.8 percent, and the AFSC sample 36.3 percent of the survey respondents.

**TABLE II**  
**Military Rank and Civilian Grade Frequency Distribution**

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
2nd Lieutenant	0	0.0	0.0
1st Lieutenant	1	1.1	1.1
Captain	1	1.1	2.2
Major	1	1.1	3.3
Lieutenant Colonel	0	0.0	3.3
Colonel	0	0.0	3.3
Enlisted	0	0.0	3.3
GS-8 and below	19	20.7	24.0
GS-9	10	10.9	34.9
GS-11	8	8.7	43.6
GS-12	34	37.0	80.6
GS-13	12	13.0	93.6
GS-14	2	2.2	95.8
GS-15	3	3.3	99.1
Did not indicate	1	1.1	100.2
<b>Total</b>	<b>92</b>	<b>100.2</b>	

Federal Service. Table III represents the length of federal service of the respondents. It shows that 46.7 percent of the respondents had ten or fewer years of government work experience. In the AFSC sample, exactly 50 percent had ten or fewer years of federal experience. The AFLC population listed 37.2 percent of negotiator personnel with ten or fewer years of federal service.

TABLE III  
Years of Federal Service

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
10 years or less	43	46.7	46.7
11 to 20 years	27	29.3	76.1
21 to 30 years	17	18.5	94.6
31 or more years	5	5.4	100.0
Total	92	100.0	

Contracting Experience. Table IV represents the amount of contracting experience of the survey respondents. It indicates that 60.9 percent of the AFLC respondents had ten or fewer years contracting experience. This compares with the AFSC sample, which had 64.7 percent of its respondents in this classification. The AFLC population data indicated that 68.4 percent of negotiator personnel had ten or fewer years of contracting experience.

TABLE IV  
Years in Contracting

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
10 years or less	56	60.9	60.9
11 to 20 years	29	31.5	92.4
21 to 30 years	6	6.5	98.9
31 or more years	1	1.1	100.0
Total	92	100.0	

Education. Table V shows the education level of the respondents. It indicates that the majority of the respondents had at least a bachelor's degree (66.3%). The inverse of that statistic shows that the percentage of respondents without any kind of degree was 33.7 percent in the AFLC sample. The AFLC negotiator population had 38.5 percent of personnel without at least a bachelor's degree. This compared with only 10.8 percent of the AFSC survey respondents without at least a bachelor's degree.

TABLE V  
Education Level

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
High school graduate	15	16.3	16.3
College but no degree	16	17.4	33.7
Bachelor degree	20	21.7	55.4
Some graduate work	15	16.3	71.7
Master's degree	17	18.5	90.2
Some postgrad work	8	8.7	98.9
Doctorate degree	1	1.1	100.0
Total	92	100.0	

Negotiation Training. Table VI shows the percentage of respondents who have had a formal course in negotiation. These results answer Investigative Question Number One from Chapter I. 67.4 percent of the respondents from AFLC have attended a course specifically on negotiation. A

majority of respondents in the AFSC sample (69.8%) also had attended such a course. This data was not available for the AFLC population.

TABLE VI  
Negotiation Training Course Attendance

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
Not attended	30	32.6	32.6
Attended	62	67.4	100.0
Total	92	100.0	—

Sex. Table VII shows that the AFLC sample was composed of 44.6 percent males and 55.4 percent females. The AFLC population had almost the exact reverse ratio, with 55.7 percent male and 44.3 percent female negotiators. The AFSC sample had a three to one ration of male to female respondents.

Table VII  
Proportion of Male and Female Respondents

Category	Absolute Frequency	Relative Frequency (%)	Cumulative Frequency (%)
Male	41	44.6	44.6
Female	51	55.4	100.0
Total	92	100.0	—

Summary of Demographic Analysis. The AFLC sample data compared reasonably well with the AFSC sample data. The significant differences were a higher proportion of male respondents in the AFSC sample (75% AFSC v. 44.6% AFLC) and a lower percentage of persons with less than a bachelor's degree (10.8% v. 33.7%). The frequency distributions were similar in the other five demographic categories. These findings will allow meaningful comparison of survey results from the two samples.

The AFLC sample data also compared reasonably well with the AFLC negotiator population data. The major difference here was a younger sample, with 59.8 percent of the sample being 40 years old or younger compared to 37.2 percent of the population in this category. The significant characteristics for consideration in the discussion of negotiation strategies and tactics are contracting experience, education level, and rank or grade. In these areas, the sample compared well with the population. Therefore, the sample can be described as representative of the AFLC negotiator population. A significant concern here is the exclusion of negotiators from an ALC. While the demographic data tends to support a representative sample, a factor not considered is the type of negotiations conducted by the survey respondents compared with those conducted in all of AFLC. The two organizations from which contract negotiators were sampled for this research were the Wright-Patterson Contracting Center and HQ AFLC. The Wright-Patterson Contracting Center is the base contracting organization at WPAFB. The primary activity here, in terms of number, consists of small purchases. The contracting organization at HQ AFLC consists primarily of staff functions. This group would be expected to have strong contracting backgrounds, but

not to be currently active in negotiations. The ALC organizations perform the bulk of systems-type contracting activity, some of which require complex negotiations and some which require simple purchase of "off-the-shelf" items. The sample, without inclusion of an ALC, may consist of the extremes of the AFLC population, thus approximating its demographic distribution while not being truly representative.

### Ranking of Tactics

Investigative Questions Two and Three. Tactics can be simply defined as "a series of steps in pursuit of an objective" (20:119). The objective in government negotiation is the agreement on price and terms of a product or service to be provided by a contractor. The use of various kinds of tactics by the opposing negotiators can promote either an adversarial or a cooperative relationship. The second and third research questions focused on the negotiation relationship by determining which tactics are used most often by negotiators for the government and for defense contractors. The survey questionnaire listed 33 negotiating tactics selected from various publications. Government contract negotiators were then asked to choose their five most frequently used tactics. They were also asked to rank the top five tactics defense contractor negotiating opponents used against them. Respondents were encouraged to write in any tactic used or experienced that was not included on the questionnaire's list.

Table VIII shows how frequently each tactic was listed among the top five tactics used by Air Force and contractor (KTR) negotiators as indicated by the survey respondents. Also shown is the corresponding rank for each tactic. Tactics that were not indicated at all are ranked as tied for last place.

TABLE VIII  
Frequency and Ranking of Tactics

<u>Tactic Code and Name</u>	<u>Frequencies</u>		<u>Rankings</u>	
	<u>AF</u>	<u>KTR</u>	<u>AF</u>	<u>KTR</u>
1. Adjust the thermostat	2	1	24.5	28.5
2. Allow face-saving exits	16	1	5.0	28.5
3. Appeal to patriotism	6	2	17.5	24.5
4. Ask for lots of data	31	3	1.0	22.0
5. Belabor fair and reasonable	26	2	2.0	24.5
6. "Bogey" budget limits	8	2	14.5	24.5
7. Call frequent caucuses	15	9	6.5	12.5
8. Change negotiators	2	6	24.5	18.5
9. "Cherry-pick" the best deal	3	6	21.5	18.5
10. Deadlock the negotiations	5	18	19.0	5.5
11. Deliberate errors left in offers	2	14	24.5	7.0
12. Deliberately expose papers	2	0	24.5	32.0
13. Embarrass your opponent	0	0	30.5	32.0
14. Escalate to opponent's boss	10	8	11.0	15.0
15. Escalate to your boss	10	8	11.0	15.0
16. "Good-guy/bad-guy" roles	10	4	11.0	20.5
17. "High-ball" offers	0	22	30.5	2.0
18. Impose "no smoking rule"	0	0	30.5	32.0
19. "Low-ball" offers	14	1	8.0	28.5
20. Make an offer they must refuse	8	10	14.5	11.0
21. Massage opponent's ego	8	12	14.5	8.5
22. "Must be on contract by . . .!"	15	7	6.5	17.0
23. "My plane leaves at . . . o'clock."	0	11	30.5	10.0
24. Negotiate with limited authority	11	20	9.0	4.0
25. "Off the record" discussions	8	18	14.5	5.5
26. Personal attack	0	4	30.5	20.5
27. Play hard to get	3	12	21.5	8.5
28. Refer to firm's poor performance	6	2	17.5	24.5
29. Refer to your side's generosity	22	8	4.0	15.0
30. Reverse auctioning	0	1	30.5	28.5
31. "Split-the-difference" offers	23	33	3.0	1.0
32. "Take it or leave it" offers	4	21	20.0	3.0
33. Threaten to walk out	1	9	27.0	12.5

This ordinal scaled data was used to conduct a Kendall  $\tau$  test for independence or agreement between the ranking of tactics used by Air Force negotiators and the ranking of tactics used by contractors.

There were a few "other" tactics listed not included in this ranking scheme, due to their minimal significance-- only four tactics were written in, none more than once. Of interest were the comments made by those not completing this section. Many survey respondents from the Wright-Patterson Contracting Center have experience primarily with small purchases. This group indicated their lack of exposure to situations requiring the use of negotiation tactics-- 45.6 percent did not complete the tactics section of the survey.

The results of this test for agreement on rankings of tactic use frequency, and all subsequent tests, are presented in the following format:

- a. Name of test
- b. Hypotheses (null, " $H_0$ " and alternative " $H_a$ ")
- c. Level of significance ( $\alpha$ )
- d. Critical Value (CV). Either chi square ( $\chi^2$ ) or significance level (P)

will be used.

Note: The following abbreviations  
hereafter in all the enclosures

equal to      [ ]      approximately equal to

→ creates the

[1] approximately equal to

> creates than or equal to

## Lossless

### 2. Decision rule

less than or equal to

f. SPSS-run results: Kendall ( $\tau$ ), chi square ( $\chi^2$ ), significance level (P).

Kendall  $\tau$ . (Note:  $P$  is the probability of observing a value greater than the value computed from the sample data randomly, e.g., by chance.)

- g. Decision (rejection/non-rejection of  $H_0$ )
- h. Interpretation

Test for Agreement Between Air Force and Contractor Tactics.

- a. Test name: Kendall  $\tau$

- b. Hypotheses:

$H_0$ : The two sets of rankings are independent, i.e., not in agreement.

$H_a$ : The two sets of rankings are not independent, they tend to agree with each other.

- c. Level of significance:  $\alpha = .01$ .

- d. Critical Value:  $\tau$  from Kendall  $\tau$  tables for  $n = 33$  of .288 at  $P = .01$ .

- e. Decision rule: Reject  $H_0$  if  $\tau > .288$  or  $P < .01$ .

- f. SPSS-run results: Kendall  $\tau = .0758$ ,  $P < .268$  (Spearman's  $r_s = .1173$ ,  $P < .258$ )

- g. Decision: There is insufficient evidence to reject  $H_0$ .

- h. Interpretation: According to the test results, there is not agreement between the Air Force and the contractor on the tactic rankings for frequency of use. The obvious bias associated with this test is that the data reflect only the perceptions of Air Force (AFLC) contract negotiators. Contractor rankings of their own or Air Force negotiation tactic use were not included. Still, AFLC negotiators perceive that they and contractors do not

use the same tactics. This perception was also indicated by the test results of the Catlin/Faenza study of AFSC negotiators (Kendall  $\tau = .0766$ ,  $P < .262$ ). Further analysis, the top ten tactics, and additional AFSC comparisons will be presented in Chapter V.

#### Frequency and Preference of Strategy Use

The portion of this research dealing with the various negotiation strategies used by AFLC contract negotiators provides insight into their approach to day-to-day negotiating. The survey questionnaire listed and defined ten negotiating strategies. The respondents were asked to rank them first by frequency of use, and then by their preference for use. In addition, various contractual situations were presented and the respondents indicated the preferred strategy for each situation.

Investigative Question Four. The frequent use of a negotiation strategy indicates it is either easy for the negotiator to use or effective in producing desired results. It is of interest to Air Force contract negotiators to know what the consensus is on the use of various strategies in government negotiations. Planning for a negotiation may be easier with a recommended list of effective strategies. The ranking of the strategies based on frequency of use provides the beginning of such a list. The combined responses were tested for "concordance," subsequently referred to as "consensus," using the Kendall Coefficient of Concordance  $\omega$  (Kendall  $\omega$ ) non-parametric procedure.

#### Test for Strategies: Frequency of Use.

a. Test name: Kendall  $\omega$

b. Hypotheses:

$H_0$ : The rankings assigned to the ten strategies by survey

respondents are not in agreement (do not form a consensus).

$H_0$ : There is a consensus among the survey respondents on the rankings of the ten strategies.

c. Level of significance:  $\alpha = .01$ . This  $\alpha$  was selected because the interpretations of the findings may make broad, though cautious, inferences about Air Force contract negotiators in general, and a high degree of confidence was desired for this purpose.

d. Critical Value (CV): CV = 21.666. Since most statistics texts or references do not have Kendall  $\omega$  tables for large sample sizes, the  $\chi^2$  approximation is used (X:326-328). At nine degrees of freedom (df, where  $df = n-1$ , and  $n$  = number of items to be ranked) the  $\chi^2$  critical value equals 21.666 at  $(1-\alpha) = .99$ .

e. Decision rule: Reject  $H_0$  if the  $\chi^2$  calculated from the data is larger than 21.666, or if the significance level, P, calculated by the SPSS program is less than .0100.

f. SPSS-run results: Table IX shows the mean or average rank score (ARS) for each strategy and the relative rank for each strategy based on the ARS. In addition, the ARS-rank for the AFSC sample from the Catlin/Faenza study is added for direct comparison. The calculated statistical test results are shown below, followed by the table.

Kendall  $\omega = .14361$

$\chi^2 = 72.41954$

$P < 0.00001$

TABLE IX  
Average Rank Scores and ARS Ranking of Strategy Frequency

Strategy	ARS	AFLC-Rank	AFSC-Rank
1. Combination	4.94643	4	4
2. Coverage/Bottom Line	4.23214	2	1
3. Definite Action	5.48214	6	7
4. Limits	5.57143	7	6
5. Participation	5.33929	5	3
6. Patience	6.28571	8	8
7. Surprise	7.42857	10	10
8. Reversal	7.14286	9	9
9. Statistics	3.96429	1	2
10. Step-by-Step	4.71429	3	5

g. Decision: since  $X^2 > 21.666$ ;  $P < .01$ , reject  $H_0$  and accept  $H_a$ .

h. Interpretation: There appears to be a moderately strong consensus among the AFLC survey respondents on the rankings of the ten strategies defined in the questionnaire. This is indicated by a probability less than 0.00001 of obtaining a  $X^2$  as high or higher than 72.41954. The Catlin/Faenza study also found a consensus among the survey respondents from AFSC for the strategy rankings. In fact, a very strong consensus was indicated for the AFSC sample by the  $X^2$  value of 348.17837,  $P < 0.00001$ .

The Statistics strategy was used most frequently by the AFLC respondents, indicating that negotiators regularly rely on quantitative methods and data to support their negotiating positions. The next most popular choice for use by this AFLC sample was the Coverage/Bottom Line strategy. This means that the negotiators usually negotiated on a total cost or total price basis as opposed to an item-by-item basis. The AFSC sample, however, used the Bottom Line strategy most frequently, with the Statistics

strategy indicated as the second most frequent choice. Comparison analysis of the strategy rankings of the two samples was completed using the Spearman Rank Correlation Coefficient. The null hypothesis, that the two rankings are not correlated, was rejected at  $\alpha = .01$ . (rejection region  $\geq .745$ , calculated Spearman's  $r_s = .9273$ )

Test for Strategies: Preference for Use.

a. Test name: Kendall  $\omega$

b. Hypotheses:

$H_0$ : The rankings assigned to the ten strategies by survey respondents are not in agreement (do not form a consensus).

$H_a$ : There is a consensus among the survey respondents on the rankings of the ten strategies.

c. Level of significance:  $\alpha = .01$ .

d. Critical Value (CV):  $\chi^2 = 21.666$ ;  $P < \alpha$ .

e. Decision rule: Reject  $H_0$  if SPSS-run  $\chi^2 > 21.666$  or  $P < .01$ .

f. SPSS-run results: Table X shows the ARS and ARS-rank for the ten strategies preferred by the respondents. In addition, the AFSC rank for strategy preference from the Catlin/Faenza study is shown for direct comparison. The statistical test results are listed below the table.

Kendall  $\omega = .14776$

$\chi^2 = 74.51616$

$P < 0.00001$

TABLE X  
Average Rank Scores and ARS Ranking of Strategy Preference

Strategy	ARS	AFLC-Rank	AFSC Rank
1. Combination	5.17857	5	4
2. Coverage/Bottom Line	4.73214	4	1
3. Definite Action	5.19643	6	6
4. Limits	6.07143	7	7
5. Participation	4.53571	2	2
6. Patience	6.26786	8	8
7. Surprise	7.39286	10	10
8. Reversal	7.05357	9	9
9. Statistics	3.80357	1	3
10. Step-by-Step	4.67857	3	5

g. Decision: Since  $X^2 > 21.666$  and  $P < .01$ , reject  $H_0$  and accept  $H_a$ .

h. Interpretation: There appears to be a strong consensus among the AFLC survey respondents on the ranking of preferred strategies. This is indicated by the probability of less than 0.00001 for observing a  $X^2$  as high or higher than 74.51616. The AFSC sample from the Catlin/Faenza study also found a strong consensus for the ranking of strategies by preference. The AFLC group most preferred to use the Statistics strategy, while the AFSC sample most preferred the Bottom Line strategy. Both samples indicated the Participation strategy as the second most preferred choice. This strategy involves formation of a negotiation team to narrow or broaden the areas of negotiation. The two sample's rankings were compared using the Spearman Rank Correlation Coefficient. The null hypothesis, that the rankings were not correlated, was rejected at  $\alpha = .01$ . (rejection region  $\geq .745$ , calculated test  $r_s$  value = .89)

Test for Strategies: Used Versus Preferred.

a. Test name: Kendall  $\tau$

b. Hypotheses:

$H_0$ : There is no association (agreement) between the two sets of rankings.

$H_a$ : The two sets of rankings are in agreement.

c. Level of significance:  $\alpha = .01$ .

d. Critical Value (CV): Kendall  $\tau$  statistic, found in most non-parametric statistics texts and references, which ranges from 0 to +1, where +1 indicates perfect agreement. Since "n", the number of items ranked, equals 10, the CV for the strategies Kendall  $\tau$  test is  $\tau = .600$  at  $\alpha = .01$ .

e. Decision Rule: Reject  $H_0$  if the computed  $\tau$  is greater than .600.

f. SPSS-run results: Table XI shows the ARS-rank for both the frequency of use and the preference for use. The statistical test results are presented below, followed by the table.

Kendall  $\tau = .8222$ ,  $P < .001$

Spearman's  $r_s = .9152$ ,  $P < .001$

TABLE XI  
Rankings of Strategies Used to Strategies Preferred

Strategy	Rank by Frequency	Rank by Preference
1. Combination	4	5
2. Coverage/Bottom Line	2	4
3. Definite Action	6	6
4. Limits	7	7
5. Participation	5	2
6. Patience	8	8
7. Surprise	10	10
8. Reversal	9	9
9. Statistics	1	1
10. Step-by-Step	3	3

g. Decision: Since the Kendall  $\tau$  is greater than the CV of .600, reject  $H_0$  and accept  $H_a$ .

h. Interpretation: There appears to be a strong agreement between the ranking of strategy use frequency and the ranking of strategy preference frequency. The indication is that AFLC contract negotiators are able to use the strategies they prefer to use. The AFSC sample studied by Catlin and Faenza also demonstrated agreement between the rankings of strategy use and preference. Their Kendall  $\tau$  for the comparison was .9111 at  $P < .001$ .

Preferred Strategies in Various Contract Situations

Investigative Question Five. The survey questionnaire asked contract negotiators to indicate their preferred negotiation strategy under various

contract situations. Each contracting situation was to be the primary determining factor in the strategy selection. The respondent could choose a strategy from the ten defined in the survey or select and describe a strategy from their own experience but not on the survey list. The respondent could also indicate "no experience" with a contract situation or "no preference" for a particular strategy in a given situation. The five specific contract situation areas were contract type, dollar value, type of contractual action, type of acquisition, and the degree of competition.

Several items of interest will be discussed in analysis of the impact of the various contract situations on strategy selection:

1. The most frequently selected strategies for each situation.
2. The proportion of respondents who indicated no experience with a particular situation and the proportion who indicated no preferred strategy for a given situation.
3. The shifts of strategy preference, if indicated by the data, for levels within a contract situation or from one situation to another.
4. A comparison of these results to the findings from the Catlin/Faenza study using the AFSC sample.

#### Contract Type.

Fixed Price Type Contracts. The Bottom Line strategy was the most preferred strategy for firm-fixed price (FFP) contracts, having been chosen by 35.7 percent of the survey respondents. Statistics was the next most preferred strategy with a 23.2 percent share of respondents' choices. Combination, Step-by-Step, and Participation were grouped together with 10.7 percent, 10.7 percent, and 8.9 percent shares respectively. All other strategies were selected by 5 percent or less of the respondents. All of the

AFLC survey respondents had experience with FFP contracts and all expressed a preference for a particular strategy.

For fixed-price incentive (FPI) contracts, the Statistics strategy was the clear preference of those with FPI experience, chosen by 17.9 percent of the respondents. The Combination and Bottom Line strategies were the next most preferred, each having an 8.9 percent share. However, the highest percentage of respondents (44.6%) indicated they had no experience with this type of contract. Only 3.6 percent indicated they had no preference for a strategy.

For fixed-price types of contracts (FFP and FPI), the AFLC sample's negotiators seem to most prefer use of the Bottom Line and Statistics strategies, with Combination and Step-by-Step at a secondary preference level. The Bottom Line strategy does seem appropriate for FFP contracts since they are characterized by a single price for the total contract effort. There was a dramatic increase in the number of respondents without FPI contract experience, possibly indicating this contract type is not appropriate for the kinds of items the sampled AFLC organizations buy. The Catlin/Faenza study found similar results for their AFSC sample. The Bottom Line strategy was the most preferred choice for fixed-price contracts (37.4% FFP, 15.8% FPI), followed by the Statistics and Combination strategies. No experience responses went from 3.6 percent for FFP contracts to 18 percent for FPI contracts.

Cost-Reimbursement Type Contracts. Cost-reimbursement type contracts, also known as cost-plus contracts, are generally more complex than the fixed-price type, focusing on the individual items of cost in the contractor's proposal rather than a single price for the total contract effort.

This relative complexity is recognized in the strategy selection of the survey respondents. The most preferred negotiation strategy for the cost-plus fixed fee (CPFF) contract type is the Step-by-Step, involving the presentation of a series of minor points to achieve a major concession. This strategy was indicated by 17.9 percent of the respondents. The Statistics and Participation strategies were the next most preferred choice, each receiving an 8.9 percent share. The Bottom Line strategy was the most preferred strategy for the fixed-price type contracts, but was chosen by only 3.6 percent of the respondents for use on a CPFF contract. The largest group from this AFLC sample, however, had no experience with CPFF contracts (35.7%). This compares with 44.8% having no experience with FPI contracts and all respondents having experience with FFP contracts. Those indicating no preference for a negotiation strategy were 3.6 percent of the respondents.

The Step-by-Step strategy was again the most preferred strategy for the cost-plus incentive fee (CPIF) contract type, having been chosen by 10.7 percent of the respondents. No other strategy received a significant response from those surveyed. A majority of the survey respondents, 60.7 percent, had no experience with CPIF contracts. No preference was indicated by 5.4 percent of the respondents.

The Step-by-Step and Participation strategies were each selected by 7.1 percent of the respondents for use on the cost-plus award fee contract type. Again, no other strategy received a significant response (higher than 3.6%). Continuing the evident lack of experience with cost-reimbursement contracts, 62.5 percent of the survey respondents indicated they had no experience with CPAF contracts. No preference for a particular strategy was indicated by 3.6 percent of the respondents.

The cost-plus contract types appear to encourage the selection of the

Step-by-Step or Participation strategies as the most preferred choice. These negotiation approaches better meet the more complex negotiation tasks of cost-reimbursement contracts than do the more simplistic approaches preferred for fixed-price contract types. The Catlin/Faenza study found a similar response from their AFSC sample, with the Participation and Statistics strategies being the most preferred choices. Both samples indicated a wider variety of strategies were chosen for cost-plus contracts, as opposed to the clear preference for Bottom Line for fixed-price contracts.

TABLE XII  
Frequency of Strategies Under Different Contract Types

Strategy	FFP	FPI	CPFF	CPIF	CPAF
1. Combination	6	5	3	1	2
2. Coverage/Bottom Line	20	5	2	0	1
3. Definite Action	3	2	3	3	2
4. Limits	2	1	4	0	1
5. Participation	5	4	5	3	4
6. Patience	0	0	0	0	0
7. Surprise	0	0	0	0	0
8. Reversal	0	0	1	2	2
9. Statistics	13	10	5	3	2
10. Step-by-Step	6	6	10	6	4
11. No Preference	0	2	2	3	2
12. No Experience	0	25	20	34	35
13. Other Strategies	1	1	1	1	1

Summary of Contract Type. There appears to be a definite shift of preference from the Bottom Line strategy for the fixed-price contract types to the Step-by-Step or Participation strategy for the cost-plus contract types. This presumably reflects the increase in complexity, and therefore

negotiation difficulty, from the fixed-price contracts to the cost-reimbursement contracts. The increased difficulty seems to cause AFLC negotiators to seek the support of a team approach and/or to focus on smaller, minor issues in order to build up to major concessions.

There was a significant lack of experience in the AFLC sample on the FPI, CPFF, CPIF, and CPAF type contracts, with proportions of 44.6 percent, 35.7 percent, 60.7 percent, and 62.5 percent respectively. The AFSC sample also indicated a significant lack of experience for these contract types, although the proportions weren't quite as high (18.0%, 21.6%, 34.9%, and 40.3%). The AFLC sample respondents strongly expressed their strategy preferences, with only 0.0 to 5.4 percent indicating no preferred strategy for a particular contract type. In the AFSC sample, about 13 percent had no preferred strategy for the various contract types.

Contract Dollar Value. Contract dollar values function as thresholds to determine levels of review, authority, and approval for negotiations within the DOD procurement system. For example, contracts of \$25,000 or less are considered "small purchases" and are subjected to limited reviews, while contracts over \$100,000 require higher levels of review, approval, and pricing support. Survey respondents were asked to indicate their most preferred strategy for various sizes of contracts given that the contract dollar value was the most important factor.

For contracts up to \$25,000 the Bottom Line strategy was selected as most preferred by 50 percent of the survey respondents. Combination, Statistics, and Step-by-Step strategies were each chosen by 7.1 percent of the respondents. 5.4 percent of the sample had no experience with contracts in this dollar value category, and 1.8 percent expressed the "no preference"

response. For contracts ranging from \$25,000 to \$100,000, Bottom Line was still the most preferred strategy with a 35.7 percent share of respondent selections. The next most preferred were the Combination and Statistics strategies, each chosen by 10.7 percent of the respondents. No experience with this value range was indicated by 5.4 percent of the sample, and 3.6 percent had no preference for a particular strategy.

When the dollar value exceeds \$100,000, the strategy preference distribution shifts in a manner similar to the preference change between fixed-price and cost-reimbursement contract types. The movement from preference for a simple strategy like Bottom Line to a wider dispersal of choices among the more complex strategies, reflects the increasing complexity of the negotiation process as contract values move from \$100,000 to even higher dollar values.

In the \$100,000 to \$1,000,000 contract value category, the Combination strategy received 17.9 percent of respondent selections, Statistics received 16.1 percent, and Bottom Line preference had dropped to 14.3 percent. No preference was indicated by 1.8 percent, and no experience by 7.1 percent of the sample. For contracts with dollar values between \$1,000,000 and \$10,000,000, Participation and Statistics strategies were each preferred by 14.3 percent of the survey respondents. The Combination strategy was chosen by 10.7 percent of the sample, and Bottom Line by 8.9 percent. More respondents, 16.1 percent, had no experience with this dollar value range, but only 1.8 percent expressed no strategy preference.

For contracts valued between \$10 and \$25 million, the Participation and Statistics strategies each received 12.5 percent of the respondent selections, with Combination and Step-by-Step both getting 10.7 percent. Bottom Line strategy preference had dropped to 1.8 percent. The rising level of "no

"experience" continued, with 20.6 percent so indicating for this value range. No preference for a particular negotiation strategy was given by 3.6 percent of the respondents. The only significant factor for contracts valued at greater than \$25,000,000 was the increase in the proportion of respondents having no experience-- 41.1 percent. The strategy selection distribution was equivalent to those for the \$10 to \$25 million value category. The data is presented in Table XIII, showing both the actual number of preference selections and the percentage share of responses for each strategy.

Table XIII  
Strategy Frequencies Based on Dollar Value

Strategy	\$25-100K	\$100K-1M	\$1-10M	\$10-25M
Combination	6- 10.7%	10- 17.9%	6- 10.7%	6- 10.7%
Bottom Line	20- 35.7%	8- 14.3%	5- 8.9%	1- 1.8%
Participation	1- 1.8%	4- 7.1%	8- 14.3%	7- 12.5%
Statistics	6- 10.7%	9- 16.1%	8- 14.3%	7- 12.5%
Step-by-Step	3- 5.4%	5- 8.9%	3- 5.4%	5- 10.7%
No Preference	2- 3.6%	1- 1.8%	1- 1.8%	2- 3.6%
No Experience	3- 5.4%	4- 7.1%	9- 16.1%	16- 28.6%
Other	5- 8.9%	5- 8.9%	5- 8.9%	6- 10.7%

Note that only the top five strategies, determined from the "preference for use" segment of this research, are displayed in the table. The other strategies were not selected by significant proportions and were not necessary to illustrate the trends of the data. Frequency distributions therefore will not add to 100.0 percent. Data for the remaining contract situations will be displayed in this same manner.

Summary of Contract Dollar Value Situations. The \$100,000 contract dollar value level delineates a change in negotiation strategy preference. For contracts below that level, the Bottom Line strategy was the clear preference for use by the survey respondents. Above \$100,000, there was no dominant choice, but a definite move away from the Bottom Line strategy. The Combination, Participation, Statistics, and Step-by-Step strategies all registered a higher preference for use as dollar value categories increased, achieving near equal preference proportions for the \$10 to \$25 million value range. There were very few respondents, with value category experience, who expressed no preference for a particular negotiation strategy. The proportion ranged from 1.8 to 3.6 percent for the six value categories. The "no experience" factor was significant, exhibiting a steady growth as contract dollar value categories increased. Only 5.4 percent of the respondents had no experience with contracts valued at less than \$25,000, but that proportion increased steadily through the six categories, reaching 41.1 percent with no experience on contracts over \$25 million. This factor is probably affected by the bias of a high percentage of base contracting personnel in the sample.

The Catlin/Faenza study found similar results for the effects of contract dollar value on negotiating strategy selection. The breakpoint was higher, though-- \$1,000,000 v. \$100,000-- for the preference shift to more complex strategies from the Bottom Line strategy. The strategies preferred for use at the higher value levels were Combination, Participation, and Statistics. The assumption was that the complexity and quantity of the items purchased on contracts with higher dollar values influenced the strategy selection.

Type of Contractual Action. These three types of contractual actions were included in the survey because each type presents a negotiator with a different set of negotiating challenges. In addition, they represent the common negotiation activities throughout the life of any contract. A new contract presents the most difficult negotiation challenge. The negotiator may be dealing with a new contractor, a new product or service, or a new contract type with different provisions, rules, and constraints. For major systems acquisition programs, several negotiations with different contractors may occur simultaneously for a single contract as part of the Source Selection process. Whether sole source or competitive negotiation, the new contract requires negotiation for agreement on price, delivery and payment provisions, standard and non-standard contract clauses, etc. A modification to an existing contract is a much simpler situation. An engineering or technical change proposal usually only requires price negotiation, retaining and operating under the existing contractual terms and conditions. Contract termination occurs either at the natural completion of a contract or at a termination for Government convenience or for contractor default. Some contracting organizations have a designated Termination Contracting Officer with experience and expertise to handle this situation. Table XIV presents the distribution of the top five preferred strategies.

The new contract situation drew an evenly distributed response for the top five strategies, with Bottom Line and Participation each receiving 17.9 percent of the survey respondent selections. The broad distribution of preference reflects the uncertainty and complexity involved in the negotiation of a new contract. For a contractual modification there was a clear consensus in preference for the Statistics strategy, with 41.1 percent

**Table XIV**  
**Strategy Rankings Based on Contractual Action**

Strategy	New Contract	Modification	Termination
1. Combination	8- 14.3%	7- 12.5%	2- 3.6%
2. Bottom Line	10- 17.9%	4- 7.1%	3- 5.4%
5. Participation	10- 17.9%	3- 5.4%	1- 1.8%
9. Statistics	7- 12.5%	23- 41.1%	6- 10.7%
10. Step-by-Step	8- 14.3%	2- 3.6%	6- 10.7%
11. No Preference	1- 1.8%	1- 1.8%	1- 1.8%
12. No Experience	1- 1.8%	5- 8.9%	20- 35.7%
13. Other	4- 7.1%	4- 7.1%	5- 8.9%

selecting this response. A modification to an existing contract is negotiated primarily on price alone and so the negotiator usually relies on a detailed quantitative analysis of the change proposal. For the terminating contractual action, Statistics and Step-by-Step strategies were the most preferred, with each being selected by 10.7 percent of the survey respondents. The proportion of respondents having no experience with termination was 35.7 percent, not surprising considering the specialization and relative rarity of this type of situation.

The results from the study using the AFSC sample found very similar results for strategy preference under the various contractual situations. The new contract situation received an even distribution of strategy preference responses among the top five strategies. Modification strategy preference was dominated by Bottom Line with 28.8 percent of the respondent selections, but Statistics was the next most preferred with 16.5 percent. This sample group also had a high proportion of respondents without termination contract negotiation experience, with 32.0 percent so indicating.

Type of Acquisition or Program. Air Force Logistics Command is responsible for the support and modification of all existing weapons systems for the Air Force. The modification of these systems can be quite extensive and require some research and development effort, but the bulk of AFLC contracting actions involve the procurement of production line spare parts for service of the existing systems. The survey respondents were asked to indicate their strategy preferred when the type of acquisition-- research and development or production-- was given as the primary decision factor.

Table XV shows the distribution of the top five preferred strategies.

Table XV  
Strategy Rankings Based on Type of Acquisition or Program

Strategy	R & D	Production
1. Combination	4- 7.1%	5- 8.9%
2. Bottom Line	1- 1.8%	6- 10.7%
5. Participation	2- 3.6%	5- 8.9%
9. Statistics	4- 7.1%	16- 25.0%
10. Step-by-Step	7- 12.5%	2- 3.6%
11. No Preference	1- 1.8%	0- 0.0%
12. No Experience	28- 50.0%	11- 19.6%
13. Other	6- 10.7%	7- 12.5%

The high proportion of respondents, 50.0 percent, with no experience on research and development contracts demonstrates that this is not the primary focus of AFLC acquisition. The bias of this sample due to the exclusion of ALC negotiators is significant in this area. The base contracting organization included in this sample is not likely to be involved with much research and development work. Of those who did have experience in this

area, the Step-by-Step strategy was most preferred, with 12.5 percent of the respondent selections. There was a lower proportion of the sample, 19.6 percent, with no experience on production type contracts. This is still a significant level and again probably reflects the base contracting bias of the sample. Statistics was the most preferred strategy for production contracts, receiving 25.0 percent of the sample responses. The use of this strategy is logical for the production situation because, since the product and process have been defined, the negotiation tend to focus on quantitative analysis of efficiency, production rates, and learning curve type analyses. Service type contracts were written in by several of the AFLC survey respondents, but there was no consensus on strategy preference. The Catlin/Faenza study found that the AFSC sample also preferred to use the statistics strategy for production contracts, with 23.0 percent of the respondent selections. There was a lower proportion of respondents without experience in these types of contracts-- 12.6 percent for research and development and 11.5 percent for production. The most preferred strategies for research and development type acquisition were Bottom Line and Participation, with 16.2 percent and 13.7 percent of responses respectively.

Degree of Competition. With the passage of the Competition in Contracting Act has come an increase in the attention given to the solicitation of competition in the Federal acquisition environment. The last situation considered in this section addresses the differences in negotiation strategy selection due to the level of competition involved. Respondents were asked to indicate their most preferred strategy given that the number of competing contractors (three, two, or one) was the most significant factor. Table XVI presents the distribution of the top five preferred strategies.

Table XVI  
Strategy Rankings Based on Degree of Competition

Strategy	Three or More Contractors	Two Contractors	Sole Source
1. Combination	10- 17.9%	7- 12.5%	9- 16.1%
2. Bottom Line	9- 16.1%	7- 12.5%	4- 7.1%
5. Participation	4- 7.1%	3- 5.4%	10- 17.9%
9. Statistics	3- 5.4%	7- 12.5%	15- 26.8%
10. Step-by-Step	3- 5.4%	3- 5.4%	5- 8.9%
11. No Preference	3- 5.4%	3- 5.4%	0- 0.0%
12. No Experience	3- 5.4%	3- 5.4%	0- 0.0%
13. Other	9- 16.1%	10- 17.9%	5- 8.9%

The significant change across the three categories is the shift from preference for the Bottom Line strategy to the Participation and Statistics strategies. The inference is that the negotiator can rely on the bottom line total price when there is a higher degree of competition, but shifts to a team approach or quantitative justification when there is no competition.

Weakening this assumption is that preference for the Combination strategy, "introducing many issues at one time", remains consistent in all three categories. The "other" category received a moderately large proportion of respondent selections in the competitive situations (16.1 percent and 17.9 percent), but there was no consistency among the individual responses. The Catlin/Faenza study was also inconclusive in relating strategy preference to the degree of competition.

Summary of Contract Situations. The survey data does not allow one to draw absolute conclusions about the influence of the various contract

situations on negotiation strategy preferences. However, the frequency distributions of the strategy preferences within the situational categories allow mention of suspected trends and items of interest. In looking at broader categories across the various situations, the Bottom Line strategy stood out as being preferred in the less complex contractual situations, such as "firm fixed-price" or "low dollar value." For the more complex contractual situations there was no clear preference for a particular strategy, but Statistics was chosen with consistency, indicating a general reliance on quantitative data. The results for the more complex situations may be inconclusive due to a bias in the sample. There were high levels of "no experience" responses (proportion greater than 20 percent) in 10 of the 19 situation categories, all of which could be described as "complex" categories. More information would be necessary to determine whether the sample is biased due to the exclusion of ALC respondents, or if AFLC tends to contract in a less complex manner for the kinds of items and services it procures.

#### Strategy Ranking by Demographic Differences

Investigative Question Six. The results of Investigative Question Four showed that there is a consensus on strategy use rankings for the total survey population. The purpose of this section is to explore the possibility that there may not be a consensus on strategy rankings when the sample is divided according to various demographic characteristics. The characteristics examined include such categories as education level, sex, and years of contracting experience. Note that strategy use rankings are examined as opposed to strategy preference rankings. This investigation is not designed to refute or validate common beliefs or misconceptions about the negotiators'

abilities by assigning values to the rankings of strategies of any one group over other groups. The following tests will indicate whether the paired groups of respondents show agreement on their strategy rankings and whether either of the two groups exhibit internal ranking consensus.

Strategy Ranking Differences Based on Education. The first category tested looked for variations due to education level. The demographic information for the sample showed that 75 percent of the group had at least a bachelor's degree. About 40 percent of the survey respondents had a master's degree or higher. The master's degree was used as the minimum level to separate the sample and test for consensus in their rankings of strategies. The results are listed in the standard format.

- a. Test names: Kendall  $\omega$  and Kendall  $\tau$
- b. Hypotheses:

Kendall  $\omega$  :

$H_0$ : The groups, master's degree or higher (Gp-A) and less than master's degree (Gp-B) do not have internal agreement/consensus within each group.

$H_a$ : Both Gp-A and Gp-B have internal consensus.

Kendall  $\tau$  :

$H_0$ : The set of Average Rank Score Rankings (ARS Rankings) for Gp-A and Gp-B are not associated (not in agreement).

$H_a$ : Gp-A and Gp-B ARS Rankings are in agreement. (The two groups tend to rank strategies about the same way.)

- c. Level of significance:  $\alpha = .01$
- d. Critical Value (CV):

Kendall  $\omega$  :  $\chi^2$  (df = 9)  $\alpha = .01$ , CV = 21.666

Kendall  $\tau$  : From Kendall  $\tau$  tables for  $n = 10$  and  $\alpha = .01$ , CV = .600

e. Decision rule: Reject  $H_0$  if the SPSS computed test statistic is greater than the critical values for Kendall  $\omega$  or  $\tau$  tests at  $\alpha = .01$ .

f. SPSS-run results: The Average Rank Scores and ARS rankings for both groups are listed in Table XVII, followed by the results of the two Kendall tests.

TABLE XVII  
Strategy Rankings Based on Education

Strategy	Gp-A ARS & Ranking	Gp-B ARS & Ranking		
1. Combination	4.77273	3	5.05882	5
2. Bottom Line	4.86364	4	3.82353	1
3. Definite Action	4.45455	2	6.14706	7
4. Limits	6.40909	8	5.02941	4
5. Participation	5.40909	6	5.29412	6
6. Patience	5.90909	7	6.52941	8
7. Surprise	7.95455	10	7.08824	9
8. Reversal	6.59091	9	7.50000	10
9. Statistics	3.68182	1	4.14706	2
10. Step-by-Step	5.18182	5	4.41176	3

Kendall  $\omega$  : Gp-A = .16098, Gp-B = .17364

$\chi^2$ : Gp-A = 31.91436, Gp-B = 53.13601

P: Gp-A = .00021, Gp-B < .00001

Kendall  $\tau$  : .4667, P < .030 (Spearman's  $r_s$  = .624, P < .027)

g. Decision: Reject  $H_0$  and accept the alternate for the Kendall  $\omega$  test.

There is insufficient evidence to reject  $H_0$  for the Kendall  $\tau$  test.

h. Interpretation: There is sufficient evidence of internal consensus for the two groups of education levels on their ranking of strategies. However, those with master's degrees do not rank their strategies the same way as those with less than a master's degree. There is inadequate information to determine any trend for the differences, i.e., whether those with lower education levels chose simpler strategies than the group with master's degrees. The Catlin/Faenza study did find agreement on the strategy rankings between the groups, as well as strong consensus on the rankings within each group. (Kendall  $\tau$  = .8989,  $P < .001$ )

(Note: Since the test parameters-- statistical tests, hypotheses, significance levels, critical values, and decision rules-- are the same for all the demographic categories, only the variable items-- SPSS-run results, Decisions, and Interpretation-- will be listed for the remainder of the categories.)

#### Strategy Rankings for Military Versus Civilian Respondents.

a. SPSS-run results: Table XVIII shows the Average Rank Scores and ARS Rankings computed for both the military (Gp-A) and the civilian (Gp-B) survey respondents.

Kendall  $\omega$  : Gp-A = .14116, Gp-B = .14716

$\chi^2$  : Gp-A = 35.57143, Gp-B = 70.23688

P: Gp-A < .00005, Gp-B < .00001

Kendall  $\tau$  : .719    $P < .002$  (Spearman's  $r_s$  = .8632,  $P < .001$ )

TABLE XVIII  
Strategy Rankings Based on Military and Civilian Status

Strategy	Gp-A ARS & Ranking	Gp-B ARS & Ranking	
1. Combination	5.60714	6	4.88679
2. Bottom Line	4.42857	2	4.11321
3. Definite Action	5.60714	6	5.41509
4. Limits	5.32143	5	5.52830
5. Participation	4.46429	3	5.37736
6. Patience	6.00000	8	6.33962
7. Surprise	7.03571	9	7.45283
8. Reversal	7.57143	10	7.13208
9. Statistics	4.03571	1	3.94340
10. Step-by-Step	4.92857	4	4.92453

b. Decision: Reject both the null hypotheses and accept the alternates.  
 c. Interpretation: There appears to be a moderately strong consensus within both the military and civilian groups on the rankings of strategy frequency of use. The Kendall  $\tau$  test also indicates that the two groups are in agreement as to the way they ranked the strategies. The study by Catlin and Faenza also found consensus within and between these groups.

Strategy Ranking Differences Based on Experience. The survey respondents were divided into two groups based on their indicated level of contracting experience. Group A are those individuals with ten or fewer years of contracting experience, while Group B individuals have more than ten years of contracting experience.

a. SPSS-run results: The Average Rank Scores and ARS Rankings for the two groups are shown in Table XIX, followed by the other test results.

TABLE XIX  
Strategy Rankings Based on Contracting Experience

Strategy	Gp-A ARS & Ranking	Gp-B ARS & Ranking		
1. Combination	5.05405	4	4.73684	3
2. Bottom Line	3.94595	1	4.78947	4
3. Definite Action	5.59459	7	5.26316	5
4. Limits	4.94595	3	6.78947	8
5. Participation	5.37838	6	5.26316	5
6. Patience	6.54054	8	5.78947	7
7. Surprise	7.32432	10	7.63158	10
8. Reversal	6.97297	9	7.47368	9
9. Statistics	4.10811	2	3.68421	1
10. Step-by-Step	5.16216	5	3.84211	2

Kendall  $\omega$  : Gp-A = .14069, Gp-B = .20469

$\chi^2$ : Gp-A = 46.85179, Gp-B = 35.05263

P: Gp-A < .00001, Gp-B < .00006

Kendall  $\tau$  : .5843, P < .010 (Spearman's  $r_s$  = .7052, P < .011)

b. Decision: Reject  $H_0$  and accept the alternate for the Kendall  $\omega$  test.

There is insufficient evidence to reject  $H_0$  for the Kendall  $\tau$  test.

c. Interpretation: There appears to be a consensus within each category of contracting experience level on the ranking of use for the ten negotiation strategies. However, those with ten or fewer years of contracting experience were not in agreement with the group with more than ten years experience on their strategy use rankings. There was insufficient evidence to advance a conclusion as to whether certain types of strategies were used over other types by the two groups. The AFSC sample from the Catlin and Faenza study showed strong consensus within the two contracting experience

levels, as well as agreement between the respondent groups' strategy rankings.

Strategy Ranking Differences Due to Sex. Female contract negotiators make up almost 46 percent of the AFLC negotiating workforce. These women often face long-standing prejudices and stereotypes. One of those prejudices is that women, as a group, do not perform in the same manner as men in such stressful situations as contract negotiations. Negotiation performance differences are examined by a comparison of the rankings of strategies for all female survey respondents (Gp-A) to the rankings for the male respondents (Gp-B). The assumption is made that strategy selection may influence the negotiation performance. The results of the SPSS-run are listed in Table XX.

TABLE XX  
Strategy Rankings Based on Sex

Strategy	Gp-A ARS & Ranking	Gp-B ARS & Ranking		
1. Combination	5.03571	4	4.85714	4
2. Bottom Line	3.85714	2	4.60714	2
3. Definite Action	5.60714	7	5.35714	5
4. Limits	5.17857	6	5.96429	8
5. Participation	5.14286	5	5.53571	6
6. Patience	6.75000	8	5.82143	7
7. Surprise	7.75000	10	7.10714	10
8. Reversal	7.50000	9	6.78571	9
9. Statistics	3.42857	1	4.50000	1
10. Step-by-Step	4.78571	3	4.64286	3

a. SPSS-run results:

Kendall  $\omega$  : Gp-A = .22603, Gp-B = .08921

$\chi^2$ : Gp-A = 56.96168, Gp-B = 22.50286

P: Gp-A < .00001, Gp-B = .00741

Kendall  $\tau$  : .8667, P < .001 (Spearman's  $r_s$  = .9394, P < .001)

b. Decision: Reject  $H_0$  for both Kendall  $\omega$  and Kendall  $\tau$  tests.

c. Interpretation: Both the women and the men tend to agree with their respective groups, on average, as to the ranking of the ten strategies defined in the survey questionnaire. There is also moderately strong indication that the women and the men agree on the ranking of the strategies. The Catlin/Faenza study found the same results, supported by even stronger statistical test results, for the AFSC sample of contract negotiators. (Kendall  $\omega$  for Gp-A = 100.20664, Gp-B = 271.24690, Kendall  $\tau$  = .9439.)

Strategy Differences Based on Formal Negotiation Training. This demographic category differentiates the respondents by their indication of attendance at a formal negotiation training workshop. The analysis attempts to determine if such attendance affects the rankings of strategy use frequency. Group A consists of those who attended a workshop, and Group B are those who have not received negotiation training.

a. SPSS-run results: Table XXI shows the Average Rank Scores and the ARS Rankings for the two groups, following the other test results.

Kendall  $\omega$  : Gp-A = .14895, Gp-B = .17431

$\chi^2$ : Gp-A = 56.30130, Gp-B = 22.00569

P: Gp-A < .00001, Gp-B < .00886

Kendall  $\tau$  : .5843, P < .010 (Spearman's  $r_s$  = .7356, P < .008)

TABLE XXI  
Strategy Rankings Based on Negotiating Training

Strategy	Gp-A ARS & Ranking	Gp-B ARS & Ranking	
1. Combination	4.59524	3	6.00000 7
2. Bottom Line	4.16667	2	4.42857 3
3. Definite Action	5.35714	5	5.85714 5
4. Limits	5.42857	7	6.00000 7
5. Participation	5.45238	8	5.00000 4
6. Patience	6.40476	6	5.92857 6
7. Surprise	7.23810	9	8.00000 10
8. Reversal	7.38095	10	6.42857 9
9. Statistics	4.14286	1	3.42857 1
10. Step-by-Step	4.83333	4	4.35714 2

b. Decision: Reject the null hypothesis and accept the alternate for the Kendall  $\omega$  test. There is insufficient evidence to reject the null hypothesis for the Kendall  $\tau$  test.

c. Interpretation: The groups of respondents who have and have not received formal negotiation training both show consensus within each group on their strategy use rankings. There is insufficient statistical evidence from this sample to say that there is agreement on strategy rankings between the groups. The AFSC sample analyzed in the Catlin/Faenza study, however, did find a strong consensus within each group and between the two groups.

## V. Summary, Conclusions, and Recommendations

This research has focused on the negotiating tactics and strategies used by Air Force Logistics Command (AFLC) contract negotiators. It is a direct follow-on to the study of negotiating tactics and strategies used by Air Force Systems Command (AFSC) contract negotiators, which was conducted by Catlin and Faenza (3). The AFSC study was used as the model for this research. The same survey questionnaire and statistical analyses were used to allow direct comparison of the findings and conclusions. AFLC was selected for expansion of the information base because the two commands, combined, perform the bulk of the contracting activity for the Air Force (18).

The conclusions of this report are presented through analysis of the individual research questions presented in Chapter I. Each question will be followed by a summary of the research findings and an evaluation of the conclusions. Research Question Seven-- How do the results of these questions for Air Force Logistics Command compare with the original study's results for Air Force Systems Command?-- will be addressed in the summary conclusion sections for each of the other six research questions.

### Research Question One

What proportion of Air Force Logistics Command negotiators indicate they have attended a negotiation workshop or some other formal negotiation training?

Summary. Just over two thirds of the AFLC respondents indicated they had received some form of negotiation training. The AFSC study found that

the same proportion had received such training. The proportion of those who have or have not received training appeared independent, in both samples, of other factors such as years of contract experience, rank or grade, and education level. The AFSC comparison of strategy rankings between the trained group and the untrained group of negotiators found no significant differences in the rankings. The AFLC comparison, however, did not find statistical agreement on strategy rankings between the two groups.

Conclusions. The presence or absence of negotiation training seems to have minimal impact on the negotiation responsibility of personnel or their negotiation strategy use. This may be due to a poorly designed or ineffective negotiation training mechanism, or to the possibility that formal training is not the primary source for negotiation information. The findings support the possibility of an alternate primary source, most likely observation and advice from other negotiators in the contracting organization.

#### Research Questions Two and Three

What tactics do Air Force Logistics Command negotiators use most frequently? Which tactics do Air Force Logistics Command negotiators indicate as most often used by DOD contractors?

Summary. The answers revealed by this combination of questions provide a view of AFLC negotiators' perception of the Government's negotiation situation. This perception is consistent with the AFSC study results, as can be seen by the agreement of tactic rankings between the two sample groups. Table XXII presents the five most frequently used tactics by the Air Force and the contractor as determined from both the AFLC and AFSC survey respondent samples.

Table XXII  
Most Frequently Used Tactics

Rank	Air Force Tactics	<u>AFLC</u>	Contractor Tactics
1	Ask for lots of data		"Split the difference" offers
2	Belabor fair and reasonable		"High-ball" offers
3	"Split the difference" offers		"Take it or leave it" offers
4	Refer to your side's generosity		Negotiate with limited authority
5	Allow face-saving exits		Deadlock the negotiations
		<u>AFSC</u>	"Off the record" discussions (tie)
1	Ask for lots of data		"Split the difference" offers
2	Belabor fair and reasonable		Negotiate with limited authority
3	"Split the difference" offers		"High-ball" offers
4	Allow face-saving exits		"Take it or leave it" offers
5	"Off the record" discussions		"Must be on contract by . . . "

Conclusions. The AFSC study found that the contract negotiators tend to view themselves as the "good guys" in negotiations, and that the survey results support the existence of a strong adversarial relationship between the Government and DOD contractors. The AFLC study confirms those findings. The tactics used by the AFLC negotiators generally reflect a positive, cooperative approach to the negotiation, while those tactics ascribed to the contractor are generally negative and contentious. The positive Air Force attitude versus the perceived negative contractor attitude naturally produces an adversarial relationship. This relationship may be appropriate for the government negotiator, since the public trust rests on his or her ability to negotiate the most advantageous price and terms for the

government. The negative perception of the contractor may be due to the existence of a prejudicial or stereotyped attitude. It would be interesting to compare this general attitude of an adversarial relationship by examination of specific instances of personal Air Force to contractor relationships.

#### Research Question Four

What strategies do Air Force Systems Command contract negotiators use most often?

Summary. There is a strong consensus among the AFLC respondents to both use and prefer the Statistics negotiating strategy (the use of quantitative analyses to support a negotiating position). The AFSC respondents expressed consensus for the use and preference of the Bottom Line strategy (emphasis on total cost/price). There was, however, statistical evidence for agreement on the rankings used and preferred between the two commands. There was also statistical evidence for a strong consensus within each study's sample on the rankings of strategies used and preferred. Finally, the studies both found a consensus between the used and preferred strategy rankings. The Surprise (use of an unexpected action to gain a concession) and Reversal (attempting to take back a concession already made) strategies were the least preferred strategies among both sample groups.

Conclusions. It can be inferred from these results that negotiators in both commands negotiate in much the same way. The implication is that the Air Force has a fairly homogeneous group of contract negotiators in terms of strategy use in negotiations. Unfortunately, a contractor might also find the strategy use of Air Force negotiators to be predictable, thus allowing

preparation of an effective counter strategy. However, adjustment of strategies to situational contract variables and allowance for individual Air Force negotiator differences would serve to eliminate this predictable nature.

### Research Question Five

What are the strategies used under specific contract situations?

Summary. Five specific contract situations were examined in this section: contract type, contract dollar value, type of contractual action, type of acquisition, and the degree of competition. Both the AFLC and AFSC samples preferred to use the Bottom Line strategy for fixed-price type contracts, while several strategies-- Statistics, Step-by-Step (presenting a series of minor points leading to a major concession), and Participation (use a team of experts)-- were used for cost-reimbursement type contracts.

In the dollar value situation, the AFLC sample group marked \$100,000 as the breakpoint for a shift in strategy use, going from a clear preference for the Bottom Line strategy on contracts valued lower than the breakpoint, to a variety of strategies (Statistics, Participation, Combination, and Step-by-Step) above the breakpoint. The AFSC study found similar results, except that the breakpoint was \$1,000,000 to mark the shift in strategy use by this sample.

Three types of contractual actions were examined: new contracts, modifications, and termination actions. Both samples indicated use of the Combination (introducing many issues at one time), Bottom Line, and Participation strategies for negotiation of new contracts. The AFLC group preferred to use Statistics on modifications, while the AFSC group used Bottom Line. Both groups had inconclusive results on termination

negotiation, with high rates of "no experience" responses.

The "type of acquisition" situations were defined as negotiating a production contract or a research and development contract. The Statistics strategy was the clear choice for use on production contracts by both sample groups. The AFSC respondents favored use of Bottom Line and Participation strategies on research and development contracts. The AFLC negotiators preferred the Step-by-Step strategy, but fifty percent of them had no experience in this type of acquisition.

The degree of competition was estimated by the hypothetical situation of proposals from one, two, or three contractors. Response from both the AFLC and AFSC samples indicated a reliance on the Bottom Line strategy when three contractors were present, moving to use of Statistics, Participation, and Combination strategies in a sole source negotiation.

Conclusions. It is evident from the results that there is significant situational variation in the negotiation strategies used by the AFSC and AFLC negotiators. This situational application of strategies and tactics was noted in Chapter II as the most sophisticated of "how to do it" approaches to negotiation. Thus it could be said that the respondent groups understand and use the sophisticated situational approach to contract negotiation.

The overall strategy selection shifted along the general continuum of "simple" to "complex" contracts. The sample groups indicated a clear preference for use of the Bottom Line strategy in the "simple" group of contract situations. This classification includes small dollar value contracts, fixed-price contracts, and competitive contracts. The more difficult negotiation of "complex" contracts produced a varied indication of strategy use from the respondents, with the Participation, Combination, Statistics, and

Step-by-Step strategies receiving significant selection proportions. The "complex" situation category consists of high dollar value contracts, cost-reimbursement contracts, sole source contracts, and research and development contracts. The difficulty of the negotiation increases when several "complex" situations are combined, but this factor was not addressed in this research.

#### Research Question Six

What differences in the ranking of strategies exist among Air Force Logistics Command contract negotiators based on education level, military or civilian status, years of contracting experience, sex, and whether or not they have received formal negotiation training?

Summary. The AFSC study found that none of the listed categories appeared to have significant influence on the ranking of strategies by the survey respondents. The AFLC study confirmed that the categories of rank or grade and sex did not have significant influence on the rankings, but there was insufficient statistical evidence to make that assertion for the categories of education level, contracting experience, or negotiation training. The smaller sample size (AFSC 212, AFLC 56) may account for the differing results. For both studies, the individual groups within each of the five categories showed strong agreement on the rankings of the ten strategies.

Conclusions. The AFSC study was able to conclude that there was little variation of strategy rankings for groups within all of the measured demographic categories. The AFLC study findings present evidence which does not support the AFSC conclusion. In the key areas of education level, contracting experience, and negotiation training, agreement on strategy

rankings was not supported by statistical evidence. The implication is that strategy selection may be influenced by the negotiator's level of education, experience, or training. Analysis of the differences in rankings do not present any clear pattern for selection of "good" versus "bad" strategies or "simple" versus "complex" strategies; they are simply not in agreement. Research on a third sample source or expansion of the AFLC sample may resolve these conflicting results.

Research Recommendations.

1. Initial research is recommended in the area of negotiation preparation. Several publications in the literature review stressed the importance of preparatory work for successful negotiations. The survey questionnaire method is recommended to determine the extent and type of required and non-required pre-negotiation planning activities for Air Force negotiators.
2. Further research is recommended to determine the effectiveness of various negotiation strategies used in the Air Force/Government environment. The present research relies on frequency of a strategy's use as an effectiveness measure. Suggest a definition of effectiveness criteria be established, followed by an examination of historical data in contract files and post-negotiation memoranda from several different types of acquisition categories.
3. Follow-on research is recommended to further examine the situational use of negotiation strategies. Suggest definition of situational variables, development of contract scenarios, and survey or interview

methodology.

4. Initial research is recommended to examine parameters of the Air Force/contractor negotiating relationship. Suggest the survey questionnaire and testing methodology be used to obtain general data, complemented by interviews with active negotiators working in different acquisition situations, i.e., base and systems contracting.

5. Follow-on research is recommended to survey negotiators from another service and/or a civilian agency, e.g., the General Services Administration, on the tactics and strategies they use and prefer. The objective would be to examine negotiating differences and similarities between various branches of the Government. Suggest the survey questionnaire and testing methodology of this research be used.

## Appendix A: Survey Questionnaire



DEPARTMENT OF THE AIR FORCE  
AIR UNIVERSITY  
AIR FORCE INSTITUTE OF TECHNOLOGY  
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

REPLY TO  
ATTN OF  
LS (Capt Terry L. Peterson, AV 785-6569)

SUBJECT  
Negotiation Tactics and Strategies Survey Package

### Each Survey Respondent

1. The attached survey, part of a graduate research project at the Air Force Institute of Technology, asks about tactics and strategies that you use and prefer in your job as a contract negotiator. The results of the project will allow you and other Air Force negotiators to share their experience.
2. I hope you will take a few minutes to fill it out and return it in the attached postpaid envelope within seven days of receipt. Of course, individual responses will be combined with others and will not be attributed to you personally.
3. This survey has been reviewed and approved by the Air Force Survey Control office at HQ MPC and the local Civilian Personnel office. Your participation is completely voluntary, but we would certainly appreciate your help.

*John M. Halliday*  
JOHN M. HALLIDAY, Lt Col, USAF  
Head, Dept of Logistics Management  
School of Systems and Logistics

2 Atch  
1. Questionnaire  
2. Return envelope

USAF Survey Control No. 83-62, expires 1 Sep 86

STRENGTH THROUGH KNOWLEDGE

## Negotiating **TACTICS** and **STRATEGIES** Questionnaire

### Introduction and Instructions

This questionnaire is in two parts. Part I requests information about your education, training, experience, current job, organization and type of program. No information about your name, social security number, or other identifying data is requested; however, other "personal-type" data such as age, sex, and rank or pay grade are requested. This data will be used for conducting statistical analysis of the answers you provide to the questions in Part II.

Part II contains questions requesting you to indicate how often you use certain negotiating **TACTICS** and **STRATEGIES** in various contracting situations.

This questionnaire is designed to be completed with minimum time and effort. When you have completed the questionnaire, please use the attached postage-paid envelope to return it.

Please add any information or comments you wish on separate sheets and attach them to this questionnaire. We appreciate your participation in this survey.

## PART I - GENERAL INFORMATION

Please fill in the block or circle the letter indicating your answers to the following questions:

8. How often do you negotiate contracts?

- a. Always
- b. Often
- c. Occasionally
- d. Seldom
- e. Never

9. Current position title (buyer, PCO, Division Chief, etc.):

\_\_\_\_\_.

10. Primary contract negotiating responsibilities (negotiator, PCO, reviewer, price/cost analyst).

\_\_\_\_\_.

11. Type of organization you currently work in:

- a. Staff (policy, review committee, etc.).
- b. Single system program office (such as B-1, F-16, etc.).
- c. Laboratory.
- d. Multi-system program office (simulators, armaments, strategic systems, etc.).
- e. Research and Development (R&D) only.
- f. Mission support (regional or local).
- g. Other: \_\_\_\_\_ (write in).

12. Estimated total number of negotiations as the lead/chief negotiator: \_\_\_\_\_.

13. Estimated total number of negotiations you participated in as other than the lead negotiator: \_\_\_\_\_.

## PART II - NEGOTIATING TACTICS AND STRATEGIES

The following questions ask you to identify and rank order various negotiating **TACTICS** and **STRATEGIES**. These **TACTICS** and **STRATEGIES** were selected from publications by Chester L. Karras, the National Contract Management Association's Negotiations Procedures and Strategies Training Manual, and other sources. While no two sources agree on all types of **TACTICS** or **STRATEGIES**, features of the approaches from these publications were combined. The following definitions are used in this questionnaire and are presented here to aid you in understanding the questions.

**TACTIC:** ANY SPECIFIC ACTION, WORDS, OR GESTURES DESIGNED TO ACHIEVE BOTH AN IMMEDIATE OBJECTIVE (such as countering an action by the other negotiating party) AND THE ULTIMATE OBJECTIVE OF A PARTICULAR STRATEGY.

**STRATEGY:** AN ORGANIZED PLAN OR APPROACH TO NEGOTIATIONS FROM AN OVERALL PERSPECTIVE WHICH MAY BE COMPRISED OF ONE OR MORE THAN ONE TACTIC.

Please feel free to write in and rank any **TACTICS** or **STRATEGIES** you use most often or most prefer but that are not listed. Also, please be as candid as possible in selecting or adding any **TACTIC**. No positive or negative connotations have been assigned to the **TACTICS** or **STRATEGIES** listed, and no such connotation will be attributed to those who complete this survey.

### PART II - SECTION ONE - NEGOTIATING TACTICS

#### INSTRUCTIONS:

1. Line through any terms you do not recognize.
2. Rank (by appropriate letter(s)) the five **TACTICS** you use most often (#1 being the most frequent).
3. Rank (in the same manner) the five **TACTICS** your negotiating opponents use most often.
4. Include any **TACTIC** you have experienced or used that is not listed.

## NEGOTIATING TACTICS

- A. Adjust the thermostat
- B. Allow face saving exits
- C. Appeal to patriotism
- D. Ask for lots of data
- E. Belabor "Fair & Reasonable"
- F. "Bogey" - Budget Limits
- G. Call frequent caucuses
- H. Change negotiators
- I. "Cherry-Pick" the best deals.
- J. Deadlock the negotiations
- K. Deliberate errors left in offers
- L. Deliberately expose notes or working papers
- M. Embarrass your opponent
- N. Escalate to opponent's boss
- O. Escalate to your boss
- P. "Good-guy-bad-guy" roles
- Q. "High-Ball" offers
- R. Impose "No-smoking rule"
- S. "Low-Ball" offers
- T. Make an offer they must refuse.
- U. Massage opponent's ego
- V. "Must be on contract by !"
- W. "My plane leaves at o'clock"!
- X. Negotiate with limited authority.
- Y. "Off-the-record" discussion.
- Z. Personal attack
- AA. Play hard to get.
- AB. Refer to the firm's past poor performance.
- AC. Refer to your side's generosity.
- AD. Reverse auctioning
- AE. "Split-the-difference" offers
- AF. "Take-it-or-leave-it"
- AG. Threaten to walk out.

<u>RANK</u>	<u>TACTIC YOU USE</u>
#1	_____
#2	_____
#3	_____
#4	_____
#5	_____

<u>RANK</u>	<u>TACTIC OPPONENTS USE</u>
#1	_____
#2	_____
#3	_____
#4	_____
#5	_____

## PART II SECTION TWO - STRATEGY RANKINGS

The following are definitions of **STRATEGIES** selected for this survey.

**#1. COMBINATION (THE "BIG POT"):** Introducing many issues at one time, using "throw-away" points to get major concessions.

**#2. COVERAGE ("BOTTOM-LINING"):** Negotiating on total cost/price basis versus item-by-item.

**#3. DEFINITE ACTION ("TESTING THE WATERS"):** Taking a definite position forcing the opposition to either accept or reject your position.

**#4. LIMITS:** Using authority, time, budget, or other limits to pressure concessions from the opposition.

**#5. PARTICIPATION/INVOLVEMENT:** Designing the team composition to narrow or broaden the areas of negotiation (use of experts, for example).

**#6. PATIENCE ("BUYING TIME OR STALLING"):** Using delay **TACTICS** to prolong consideration of an issue or to counter a time limit **STRATEGY**.

**#7. SURPRISE:** Any unexpected action to gain acceptance of a point or obtain concessions from the opposition.

**#8. REVERSAL ("THE LESSER OF EVILS"):** Presenting increasingly more rigid demands forcing the opposition to accept a lesser (preceding or following) offer - your true objective.

**#9. STATISTICS ("FIGURES DON'T LIE"):** Using learning curves, trend analysis, or historical records as the primary support for your position.

**#10. STEP-BY-STEP:** Presenting a series of acceptable minor points to obtain a major concession; also used to counter "The Bottom Line" **STRATEGY**.

Please rank the **STRATEGIES** listed below, according to frequency of use and preference, by placing a number under the respective column next to the **STRATEGY**. The number one (1) would indicate the most frequently used or preferred **STRATEGY**, and the number ten (10) the least frequently used or preferred. Remember if your use or prefer a **STRATEGY** not listed, please describe and rank it. Your input will be valuable in broadening the database of this survey.

<b>STRATEGY</b>	<b>FREQUENCY</b>	<b>PREFERENCE</b>
<b>#1. COMBINATION</b>	_____	_____
<b>#2 COVERAGE</b>	_____	_____
<b>#3 DEFINITE ACTION</b>	_____	_____
<b>#4 LIMITS</b>	_____	_____
<b>#5 PARTICIPATION</b>	_____	_____
<b>#6 PATIENCE</b>	_____	_____
<b>#7 SURPRISE</b>	_____	_____
<b>#8 REVERSAL</b>	_____	_____
<b>#9 STATISTICS</b>	_____	_____
<b>#10 STEP-BY-STEP</b>	_____	_____
<b>OTHERS (Please write in &amp; rank)</b>	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

PART II SECTION THREE

**STRATEGY RANKINGS UNDER VARIOUS CONTRACT SITUATIONS**

**INSTRUCTIONS:**

1. Indicate the **STRATEGY** (from page 7) you most prefer to use.
2. If you have no preference, then please so indicate by writing "NP" on the line next to the situation.
3. If you have no experience with a particular situation, then please so indicate by writing "NE" on the corresponding line.
4. Assume that the situation presented is the primary determining factor in your choice.

**REMEMBER - INDICATE YOUR MOST PREFERRED STRATEGY**

<u>SITUATION</u>	<u>STRATEGY</u>	
<u>CONTRACT TYPE</u>		
FIRM FIXED PRICE	-----	
FIXED PRICE INCENTIVE	-----	
COST PLUS FIXED FEE	-----	
COST PLUS INCENTIVE FEE	-----	
COST PLUS AWARD FEE	-----	
<u>CONTRACT DOLLAR VALUE</u>		
<u>FROM</u>	<u>TO</u>	
0	25,000	-----
25,000	100,000	-----
100,000	1,000,000	-----
1,000,000	10,000,000	-----
10,000,000	25,000,000	-----
OVER	\$25,000,000	-----

REMEMBER - INDICATE YOUR MOST PREFERRED STRATEGY

<u>SITUATION</u>	<u>STRATEGY</u>
<u>TYPE OF CONTRACTUAL ACTION</u>	
NEW CONTRACT	_____
CONTRACT MODIFICATION (ECP, ADDED WORK, ETC)	_____
TERMINATION - SETTLEMENT OF CLAIMS - CLOSE-OUT	_____
OTHER (Please specify)	_____
<u>TYPE OF ACQUISITION OR PROGRAM</u>	
RESEARCH AND DEVELOPMENT	_____
PRODUCTION	_____
OTHER (Please indicate)	_____
<u>DEGREE OF COMPETITION</u>	
THREE OR MORE COMPETING CONTRACTORS	_____
TWO COMPETING CONTRACTORS	_____
SOLE SOURCE CONTRACTOR NEGOTIATIONS	_____

END OF QUESTIONNAIRE

Thank you for completing this questionnaire. We really appreciate your participation in this survey. Your responses are valuable additions to the knowledge base of contract negotiating **TACTICS** and **STRATEGIES**.

## Appendix B: Recommended Reading List

### Introductory Level:

1. Coffin, Royce A. The Negotiator. A Manual for Winners. New York: AMACOM, 1973.
2. Fishof, David and Eugene Shapiro. Putting It On the Line. New York: William Morrow and Company, Inc., 1983.
3. Nierenberg, Gerald I. The Art of Negotiating. Audio tape. Stamford CT: Waldentapes, 1984.
4. Nierenberg, Juliet and Irene S. Ross. Women and the Art of Negotiating. New York: Simon and Schuster, 1985.
5. Scott, Bill. The Skills of Negotiating. New York: John Wiley & Sons, 1981.

### Intermediate Level:

1. Barlow, C. Wayne and Glenn P. Eisen. Purchasing Negotiations. Boston: CBI Publishing Company, Inc., 1983.
2. Beckman, Neal W. Negotiations ( Principles and Techniques). Lexington MA: D.C. Heath and Company, 1977.
3. Calero, Henry H. and Bob Oskam. Negotiate the Deal You Want. New York: Dodd, Mead & Company, 1983.
4. Cohen, Herb. You Can Negotiate Anything. Secaucus NJ: Lyle Stuart Inc., 1980.
5. Fisher, Roger and William Ury. Getting to Yes. Boston: Houghton Mifflin Company, 1981.
6. Greenburger, Francis and Thomas Kiernan. How To Ask For More And Get It. New York: Doubleday & Company, Inc., 1978.

7. Harris, Charles Edison, Esq. Business Negotiating Power. New York: Van Nostrand Reinhold Company, 1983.
8. Lewis, David V. Power Negotiating. Tactics and Techniques. Englewood Cliffs NJ: Prentice-Hall, Inc., 1981.
9. Morrison, William F. The Prenegotiation Planning Book. New York: John Wiley & Sons, 1985.
10. Sparks, Donald B. The Dynamics of Effective Negotiation. Houston TX: Gulf Publishing Company, 1982.
11. Sperber, Philip. Fail-Safe Business Negotiating (Strategies and Tactics for Success). Englewood Cliffs NJ: Prentice-Hall, Inc., 1983.
12. Warschaw, Tessa Albert. Winning By Negotiation. New York: McGraw-Hill Book Company, 1980.

Advanced Level:

1. Bacharach, Samuel B. and Edward J. Lawler. Bargaining. Power, Tactics, and Outcomes. San Francisco: Jossey-Bass Publishers, 1981.
2. Karrass, Gary. Negotiate to Close. New York: Simon and Schuster, 1985.
3. Lewicki, Roy J. and Joseph A. Litterer. Negotiation. Homewood IL: Richard D. Irwin, Inc., 1985.
4. Pruitt, Dean G. Negotiation Behavior. New York: Academic Press, Inc., 1981.
5. Shea, Gordon F. Creative Negotiating. Boston: CBI Publishing Company, Inc., 1983.
6. Wall, James A., Jr. Negotiation: Theory and Practice. Glenview IL: Scott, Foresman and Company, 1985.

AD-A175 842

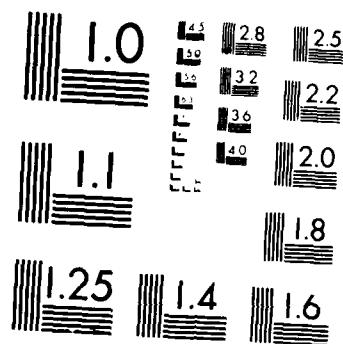
EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES OF  
AIR FORCE LOGISTICS (U) AIR FORCE INST OF TECH  
WRIGHT-PATTERSON AFB OH SCHOOL OF SYST. T L PETERSON  
UNCLASSIFIED SEP 86 AFIT/GLM/LSQ/86S-58

2/2

F/G 5/1

NL





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963 A

## Bibliography

1. Bacharach, Samuel B. and Edward J. Lawler. Bargaining (Power, Tactics, and Outcomes). San Francisco: Jossey-Bass Publishers, 1981.
2. Buskirk, Richard H. Handbook of Managerial Tactics. Boston: Cahners Books, Inc., 1976.
3. Catlin, Capt Robert M. and Capt Bernard J. Faenza. Identification of Negotiation Tactics and Strategies of Air Force Contract Negotiators. MS Thesis, AFIT/GLM/LSP/85S-12. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1985.
4. Daniel, Wayne W. Applied Nonparametrics Statistics. Boston: Houghton Mifflin Company, 1978.
5. Emory, C. William. Business Research Methods. Homewood IL: Richard D. Irwin, Inc., 1980.
6. Fisher, Roger and William Ury. Getting to Yes. Boston: Houghton Mifflin Company, 1981.
7. Greenburger, Francis and Thomas Kiernan. How To Ask For More And Get It. New York: Doubleday & Company, Inc., 1978.
8. Harris, Charles Edison, Esq. Business Negotiating Power. New York: Van Nostrand Reinhold Company, 1983.
9. Karrass, Chester L. The Negotiating Game. New York: The World Publishing Company, 1970.
10. -----, Give and Take (The Complete Guide to Negotiating Strategies and Tactics). New York: Thomas Y. Crowell Company, 1974.

11. Lewicki, Roy J. and Joseph A. Litterer. Negotiation. Homewood IL: Richard D. Irwin, Inc., 1985.
12. -----. Negotiation: Readings, Exercises, and Cases. Homewood IL: Richard D. Irwin, Inc., 1985.
13. Lewis, David V. Power Negotiating (Tactics and Techniques). Englewood Cliffs NJ: Prentice-Hall, Inc., 1981.
14. Mahoy, James O., et al. Government Contract Law. Textbook for CMGT 549, Legal Aspects of Contracting. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, 1986.
15. McClave, James T. and P. George Benson. Statistics for Business and Economics. San Francisco: Dellen Publishing Company, 1982.
16. Morrison, William F. The Prenegotiation Planning Book. New York: John Wiley & Sons, 1985.
17. Pruitt, Dean G. Negotiation Behavior. New York: Academic Press, Inc., 1981.
18. Smith, Brig Gen Richard D. Class lecture given to CMGT 554, Seminar in Acquisition Management. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, August 1986.
19. Wall, James A., Jr. Negotiation: Theory and Practice. Glenview IL: Scott, Foresman and Company, 1985.
20. Warschaw, Tessa Albert. Winning By Negotiation. New York: McGraw-Hill Book Company, 1980.

## VITA

Captain Terry L. Peterson was born on 4 May 1957 in Madison, Wisconsin. He graduated from Manatee High School in Bradenton, Florida, in 1975. He attended Emory University in Atlanta, Georgia, graduating in June 1979 with a Bachelor of Business Administration degree in Economics. He attended Officer Training School at Lackland AFB, Texas and was commissioned a Second Lieutenant in March 1980. He was then assigned to the Deputate for Space Transportation System, Space Division, Los Angeles AFS, California, working as the Titan transition planning manager. In September 1980 he was assigned within the Space Transportation System Deputate to the Inertial Upper Stage (IUS) program management office, where he worked as the IUS financial resources manager. In January 1984 he was assigned to the Deputate for Contracting, where he worked as a buyer, contract administrator, and negotiator on the various IUS contracts, on a Space Shuttle security procedures analysis contract, and on a Space Shuttle avionics engineering services contract. He entered the School of Systems and Logistics, Air Force Institute of Technology, in May 1985.

Permanent Address: 5991 Coral Way  
Bradenton, FL 33507

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

## REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b. RESTRICTIVE MARKINGS <i>A175 042</i>										
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release, Distribution unlimited										
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE												
4 PERFORMING ORGANIZATION REPORT NUMBER(S) AFIT/GLM/LSQ/86S-58		5. MONITORING ORGANIZATION REPORT NUMBER(S)										
6a. NAME OF PERFORMING ORGANIZATION School of Systems and Logistics	6b. OFFICE SYMBOL (If applicable) AFIT/LSQ	7a. NAME OF MONITORING ORGANIZATION										
6c. ADDRESS (City, State and ZIP Code) Air Force Institute of Technology Wright-Patterson AFB OH 45433-6583		7b. ADDRESS (City, State and ZIP Code)										
8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER										
8c. ADDRESS (City, State and ZIP Code)		10. SOURCE OF FUNDING NOS.										
		PROGRAM ELEMENT NO.	PROJECT NO.									
		TASK NO.	WORK UNIT NO.									
11. TITLE (Include Security Classification) See Box 19												
12. PERSONAL AUTHOR(S) Terry L. Peterson, B.B.A., Captain, USAF												
13a. TYPE OF REPORT MS Thesis	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Yr., Mo., Day) 1986 September	15. PAGE COUNT 100									
16. SUPPLEMENTARY NOTATION												
17. COSATI CODES <table border="1"><tr><th>FIELD</th><th>GROUP</th><th>SUB. GR.</th></tr><tr><td>15</td><td>05</td><td></td></tr><tr><td>05</td><td>03</td><td></td></tr></table>		FIELD	GROUP	SUB. GR.	15	05		05	03		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Contract Administration, Contracts, Air Force Procurement, Strategies, Negotiations	
FIELD	GROUP	SUB. GR.										
15	05											
05	03											
19. ABSTRACT (Continue on reverse if necessary and identify by block number)  TITLE: EXAMINATION OF NEGOTIATION TACTICS AND STRATEGIES OF AIR FORCE LOGISTICS COMMAND CONTRACT NEGOTIATORS  THESIS ADVISOR: Bernard J. Faenza, Captain, USAF												
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS <input type="checkbox"/>		21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED										
22a. NAME OF RESPONSIBLE INDIVIDUAL Bernard J. Faenza, Captain, USAF		22b. TELEPHONE NUMBER (Include Area Code) 513-255-6280	22c. OFFICE SYMBOL AFIT/LSQ									

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

This research examined the use of negotiation strategies and tactics by ninety-two Air Force Logistics Command Contract negotiators. Ten strategies and thirty-three tactics were ranked by the negotiators according to preference and frequency of use. The negotiators also indicated strategies preferred under five situational contract variables: contract type, dollar amount, type of action, type of program, and degree of competition.

The survey questionnaire method was used to gather data from Air Force Logistics Command contracting organizations at Wright-Patterson AFB OH. The data was analyzed using the Statistical Package for the Social Sciences (SPSS). Frequency distributions were analyzed by use of two non-parametric statistical tests: the Kendall-W Coefficient of Concordance and the Kendall-Tau Rank Correlation Coefficient. The Kendall-W tested for overall group consensus on tactic and strategy rankings. The Kendall-Tau tested agreement between paired ranking sets of tactics and strategies.

The rankings of tactics and strategies by the AFLC contract negotiators were compared with the rankings by Air Force Systems Command negotiators from a previous study. Substantial similarities were found in these areas: the ranking of tactic use by Air Force Systems Command negotiators; the overall strategy use and preference rankings; the strategies preferred under various contract situations. Differences between the two commands were found in the comparison of strategy rankings by groups within demographic categories. This AFLC study noted disagreement on strategy rankings in the categories of education level, negotiation strategy, and contracting experience, but the AFSC study showed agreement between these groups.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

E

W

D

87

D T / C